ENVIRONMENTAL LAW

Q.1) Discuss the various legal remedies to protect Environment.

Ans: In India, there are a plethora of legal provisions which seek to protect the environment from attacks from the human race. Along with the various Constitutional provisions, there are several legislative enactments passed by the Parliament of India in order to achieve the constitutional objective of ensuring a wholesome environment to the citizens of India. To name a few, they are Water (Prevention and Control of Pollution) Act, 1974; Air (Prevention and Control of Pollution) Act, 1981; Environment (Protection) Act, 1986. Also, there are several provisions under the Indian Penal Code, 1860, which highlight the penal provisions in case of injury sustained by any individual on account of environmental damage caused by any other individual. Also, there are ample remedies available under the common law vis-à-vis environmental protection such as nuisance, trespass, negligence and strict liability.

Constitutional provisions vis-à-vis Environmental Protection

The directive principles of State Policy and the chapter on fundamental duties explicitly enunciate the national commitment to protect and improve the environment. "It is now well settled judicial principle that right to pollution free environment is the fundamental right and human right of a citizen."[1] "The Supreme Court in its judicial pronouncements held that the "precautionary principle" and "polluter pay principle" is law of land.[2]"

Before the 42nd Amendment, the word 'environment' was not mentioned in the Indian Constitution. By this Amendment, Article 48-A was added in the directive principles of state policy and by Article 51-A, a new provision was inserted in the form of fundamental duty. According to Article 48-A "the State shall Endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country".

As per the sub-clause (g) of Art. 51-A, "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures".

In *Rural Litigation and Entitlement Kendra v. State of UP*[3]*,* the Hon'ble Supreme Court observed that protection of environment is not only a duty of the state under Article 48-A, but the citizens of India are also duty bound to protect the environment under Article 51-A (g) of the Constitution. Originally fundamental duty incorporated in the Constitution was not directly enforceable. However, with the passage of time and through judicial activism, necessary stimulus was provided to achieve the objective behind the incorporation of fundamental duty in the Constitution for the protection of environment. In *L. K. Koolwal v. State of Rajasthan and Ors*[4], the court explained the ambit of Article 51-A. It is true that it is the duty of the citizen to protect the environment under Article 51-A (g) of the Constitution but this Article also creates a right in the favour of the citizen to move to the court for the enforcement of the Article 51-A(g).

In *M.C.Mehta v. State of Orissa*[5] , court observed that there cannot be any right without the duty. So if there is insanitation in the environment it will severely affect the life of citizens and hence it is the violation of fundamental rights of citizens. Hence, it is the duty of the citizen to see that the rights which are provided to them under the constitution are fulfilled by the state. In *AIIMS Students' Union v. AIIMS and Ors*[6]*,* Supreme Court observed that even though fundamental duties are not enforceable by the court of law, it still gives important guidance for the interpretation of constitutional provisions for the protection of environment. Court also emphasised that fundamental duties should be given its full meaning as intended by the 42nd constitutional amendment. When the court is approached to give effect to directive principles of state policy and fundamental rights, it cannot run away from its responsibility by saying that priorities are a matter of policy.

Part III of the Constitution deals with Fundamental Rights. Herein, Article 21 deals with right to life. This right would be meaningless if there is no healthy environment for the citizens to live in. In *M.C. Mehta v. Union of India*[7] the Supreme Court held that the right to live in pollution- free environment is a part of fundamental right to life under Article-21 of the Constitution. In *Subhash Kumar v. State of Bihar*[8]*,* Hon'ble Supreme court held that right to life under Article 21 includes the right to enjoyment of pollution free water and air. In *P.A. Jacob v. Superintendent of Police, Kottayam*[9]*,* the court held that subjecting an unwilling person to disastrous levels of noise pollution would amount to infringement of fundamental right of an individual under Article 21 of the Constitution of India.

Remedies available under common law vis-à-vis Environmental Protection

a) Nuisance

Nuisance is related to unlawful interference with one's enjoyment of land or any right arising from it, thereto. It may be categorized into Public Nuisance or Private Nuisance. As the name suggests, public nuisance deals with interference with a right pertaining to public. Whereas, private nuisance is interference with right which is exercised exclusively by a private entity or an individual. There are a few remedies available vis-à-vis public nuisance in Criminal Procedure Code, 1973. Section 91 of the Criminal Procedure Code, 1973 prescribes that a suit may be filed to obtain a suitable relief or injunction for any cause of action affecting or likely to affect public nuisance. Also, in Criminal Procedure Code, a magistrate is empowered to restrain any person from carrying out an act that may give effect to public nuisance.[10] In *Ramlal v. Mustafabad Oil and Oil Ginning Factory*[11], the Punjab and Haryana Court observed that once a noise is found to be above the necessary threshold to attract the liability of public nuisance, it is no valid defense to contend that such noise arose out of any legal activity. Apart from this, public nuisance has been made punishable under the Indian Penal Code, 1860.[12]

b) Negligence

It is a point to note that in order to bring a successful action vis-à-vis negligence, it is necessary to establish a direct nexus between negligence and the damage caused. The other ingredient that constitutes negligence is that the respondent did not take sufficient care to avoid public nuisance that the person was required to take such care under the law. In *Naresh Dutt Tyagi v. State of Uttar Pradesh*[13], fumes released from the pesticides leaked to a nearby property through ventilators that resulted in the death of three children and foetus in a pregnant woman. It was held by the court that it was a clear-cut case of negligence.

c) Trespass

It is an unlawful interference with another's possession of property. The primary ingredient to establish a case of trespass is that there should be an intentional invasion of another's physical possession of property. Thus, two primary ingredients to establish a case of trespass are:

i.) There should be intentional interference

ii.) Such interference should be direct in nature

d) Strict Liability

The concept of strict liability started from the case of *Rylands v. Fletcher*[14], "the person who, for his own purposes, brings on his land and collects and keeps there anything likely to do mischief, if it escapes, must keep it in at his own peril and if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape"[15]. The exceptions to the rule of strict liability are as follows:

i.) Act of God

ii.) Act committed by a third party

iii.) Any fault committed by plaintiff himself

iv.) An act committed after obtaining expressed or implied consent of the plaintiff

v.) Natural use of land by the defendant

The locus classicus vis-à-vis strict liability in Indian setting is *M C Mehta v. Union of India*[16], popularly known as Oleum Gas Leak Case. In this case, the Hon'ble Supreme Court observed that if a hazardous or inherently dangerous activity is being carried out in any premises and in case of a release of such toxic substance any damage is caused, such enterprise is strictly and absolutely liable for all the damages arising thereto, and any of the exceptions listed out above are not applicable as a defense in a case of strict liability. In addition to this, the court also held in the *Union Carbide Corporation v. Union of India*[17] that the compensation has to be directly proportional to magnitude and capacity of the enterprise because such compensation needs to have a deterrent effect.

Penal Provision vis-à-vis Environmental Protection

There are specific penal provisions in various legislations for the protection of environment. Chapter XIV of the Indian Penal Code (hereinafter referred as IPC), containing section 268 to 294-A, deals with offences relating to public health, safety etc. The main object of these provisions is to protect the public health, safety and convenience by rendering those act\s punishable which make the environment polluted and dangerous to the life of an individual.

Section 268 of the Indian Penal Code, 1860, defines the term public nuisance and section 290 of the IPC makes public nuisance punishable. Thus, under these provisions if any act or omission causing injury to any person by polluting the environment takes place, the same can be subjected to prosecution. Noise pollution is also punishable under Section 268 of IPC. In *K Ramkrishnan v. State of Kerala.*[18]*,* the court held that smoking in public place comes under the category of public nuisance. It is punishable under section 290 of Indian Penal Code. Also, in *Murli S. Deora v. Union of India*[19]*,* the Supreme Court held that under Article 21, smoking in public place is a violation of fundamental right of those who don't smoke.

Sections 269 to 271 deal with negligent acts which are likely to spread infection of diseases dangerous to the life of people. These acts are punishable under sections 269 to 271. The punishment provided u/s 269 and 271 is imprisonment up to six months or fine or both. Section 277 can be used for preventing the water pollution. Under section 277 punishment of imprisonment is up to three months or a fine up to 500 Rupees or both. Apart from these, under section 426, 430, 431 and 432 of IPC, pollution caused by mischief is also punishable.

There are two primary legislations that enlist penal provisions for violation of the law propounded in those legislations. They are The Water (Prevention and Control of Pollution) Act, 1974, and Environment (Protection) Act, 1986. According to Section 47 of The Water Pollution Act, a person is vicariously liable for the offence committed by the company if such person is in charge of the functions committed by the company or for conduct of business of the company. This is indispensible ingredient to constitute a case under S. 47 of the Act. However, the defense available under this section is that the offence in question must have been committed without knowledge or consent of the accused in question.

"It also needs to be noted that Section 16 of Environment Act and Section 47 of The Water Act are parimateria to each other. Herein, it is paramount that the complaint contains specific averments against the accused. It is not out of place to mention that the provisions of Section 16 of the Environment (Protection) Act 1986 are parimateria to the Section 141 of the Negotiable Instrument Act as well as Section 25 of the Contract Labour (Regulation and Abolition) Act, 1970, and Section 278 B of the Income Tax Act. The Hon'ble Supreme Court while dealing with the cases under Negotiable Instruments Act in *National Small Industries Corporation Ltd. vs Harmeet Singh Pental and another* reported in 2010 (3) S.C.C. 330 has held that it is mandatory for the complainant to make averments in the complaint petition that the accused is directly in charge and was responsible to the company for the conduct of the business of the company. The Hon'ble Supreme Court said that if the said necessary ingredient is missing in the complaint petition, then in that case, prosecution launched against the accused cannot be sustained."[20]

It has been observed that there are more than enough legislations that try to deal with the menace of environment degradation. The massive amount of legislation has led to a situation of confusion and difficulty in enforcement. To deal with the same, there is a need for a strong integrated legislation that can provide a much clearer and integrated approach which can provide the necessary protection to environment. Also, the pollution boards have been given the powers to launch prosecution before the court of law to bring the violators to book as far as environmental degradation is concerned. The idea of giving quasijudicial powers to these boards can be considered so they can impose penalty upon those who violate the law and also reduce the burden on the already overburdened courts.

Q.2. International Momentum.

Ans: The United Nations Conference on the Human Environment was held in Stockholm, Sweden from June 5–16 in 1972.

When the United Nations General Assembly decided to convene the 1972 Stockholm Conference, taking up the offer of the Government of Sweden to host it,[1] UN Secretary-General U Thant invited Maurice Strong to lead it as Secretary-General of the Conference, as the Canadian diplomat (under Pierre Trudeau) had initiated and already worked for over two years on the project. The United Nations Environment Programme, or UNEP, was created as a result of this conference. ☑

Sweden first suggested to the United Nations Economic and Social Council ECOSOC in 1968 the idea of having a UN conference to focus on human interactions with the environment. ECOSOC passed resolution 1346 supporting the idea. General Assembly Resolution 2398 in 1969 decided to convene a conference in 1972 and mandated a set of reports from the UN secretary-general suggesting that the conference focus on "stimulating and providing guidelines for action by national government and international organizations" facing environmental issues.[5] Preparations for the conference were extensive, lasting 4 years, including 114 governments, and costing over $30,000,000.

Issues at the Conference:

The Soviet Union and other Warsaw Pact nations boycotted the conference due to the lack of inclusion of East Germany, which was not allowed to participate as it was not a full member of the UN.[6][7]

At the conference itself, divisions between developed and developing countries began to emerge. The Chinese delegation proved hostile to the United States at the conference, issuing a 17-point memorandum condemning United States policies in Indochina, as well as around the world. This stance emboldened other developing countries, which made up 70 of the 122 countries attending. Multiple countries including Pakistan, Peru, and Chile issued statements that were anti-colonial in nature, further worrying the United States delegation. So harsh was the criticism that Rogers Morton, at that time secretary of the interior, remarked "I wish the Russians were here", to divert the attention of the Chinese criticisms.[7]

In 1972, environmental governance was not seen as an international priority, particularly for the Global South. Developing nations supported its creation of the UNEP, not because they supported environmental governance, but because of its headquarters' location in Nairobi, Kenya, as the UNEP would be the first UN agency to be based in a developing country.[4]

(i) Stockholm Declaration: The meeting agreed upon a Declaration containing 26 principles concerning the environment and development; an Action Plan with 109 recommendations, and a Resolution.

Principles of the Stockholm Declaration:

1. Human rights must be asserted, apartheid and colonialism condemned
2. Natural resources must be safeguarded
3. The Earth's capacity to produce renewable resources must be maintained
4. Wildlife must be safeguarded
5. Non-renewable resources must be shared and not exhausted
6. Pollution must not exceed the environment's capacity to clean itself
7. Damaging oceanic pollution must be prevented
8. Development is needed to improve the environment
9. Developing countries therefore need assistance
10. Developing countries need reasonable prices for exports to carry out environmental management
11. Environment policy must not hamper development
12. Developing countries need money to develop environmental safeguards
13. Integrated development planning is needed
14. Rational planning should resolve conflicts between environment and development
15. Human settlements must be planned to eliminate environmental problems
16. Governments should plan their own appropriate population policies
17. National institutions must plan development of states' natural resources
18. Science and technology must be used to improve the environment
19. Environmental education is essential
20. Environmental research must be promoted, particularly in developing countries
21. States may exploit their resources as they wish but must not endanger others
22. Compensation is due to states thus endangered
23. Each nation must establish its own standards
24. There must be cooperation on international issues
25. International organizations should help to improve the environment
26. Weapons of mass destruction must be eliminated

One of the seminal issues that emerged from the conference is the recognition for poverty alleviation for protecting the environment. The Indian Prime Minister Indira Gandhi in her seminal speech in the conference brought forward the connection between ecological management and poverty alleviation.

The Stockholm Conference motivated countries around the world to monitor environmental conditions as well as to create environmental ministries and agencies. Despite these institutional accomplishments, including the establishment of UNEP, the failure to implement most of its action programme has prompted the UN to have follow-up conferences.[13] The succeeding United Nations Conference on Environment and Development convened in Rio de Janeiro in 1992 (the Rio Earth Summit), the 2002 World Summit on Sustainable Development in Johannesburg and the 2012 United Nations Conference on Sustainable Development (Rio+20) all take their starting point in the declaration of the Stockholm Conference.

Some argue[14] that this conference, and more importantly the scientific conferences preceding it, had a real impact on the environmental policies of the European Community (that later became the European Union). For example, in 1973, the EU created the Environmental and Consumer Protection Directorate, and composed the first Environmental Action Program. Such increased interest and research collaboration arguably paved the way for further understanding of global warming, which has led to such agreements as the Kyoto Protocol and the Paris Agreement, and has given a foundation of modern environmentalism.

(ii) Rio Conference: The United Nations Conference on Environment and Development (UNCED), also known as the Rio de Janeiro Earth Summit, the Rio Summit, the Rio Conference, and the Earth Summit (Portuguese: ECO92), was a major United Nations conference held in Rio de Janeiro from 3 to 14 June in 1992.

Earth Summit was created as a response for Member States to cooperate together internationally on development issues after the Cold War. Due to issues relating to sustainability being too big for individual member states to handle, Earth Summit was held as a platform for other Member States to collaborate. Since the creation, many others in the field of sustainability show a similar development to the issues discussed in these conferences, including non-governmental organizations (NGOs).[1]

The issues addressed included:

- systematic scrutiny of patterns of production — particularly the production of toxic components, such as lead in gasoline, or poisonous waste including radioactive chemicals
- alternative sources of energy to replace the use of fossil fuels which delegates linked to global climate change

- new reliance on public transportation systems in order to reduce vehicle emissions, congestion in cities and the health problems caused by polluted air and smoke
- the growing usage and limited supply of water

An important achievement of the summit was an agreement on the Climate Change Convention which in turn led to the Kyoto Protocol and the Paris Agreement. Another agreement was to "not to carry out any activities on the lands of indigenous peoples that would cause environmental degradation or that would be culturally inappropriate".

The Convention on Biological Diversity was opened for signature at the Earth Summit, and made a start towards redefinition of measures that did not inherently encourage destruction of natural ecoregions and so-called uneconomic growth.

Although President George H.W. Bush signed the Earth Summit's Convention on Climate, his EPA Administrator William K. Reilly acknowledges that U.S. goals at the conference were difficult to negotiate and the agency's international results were mixed, including the U.S. failure to sign the proposed Convention on Biological Diversity.[2]

Twelve cities were also honoured by the Local Government Honours Award for innovative local environmental programs. These included Sudbury in Canada for its ambitious program to rehabilitate environmental damage from the local mining industry, Austin in the United States for its green building strategy, and Kitakyūshū in Japan for incorporating an international education and training component into its municipal pollution control program.

The Earth Summit resulted in the following documents:

- Rio Declaration on Environment and Development
- Agenda 21
- Forest Principles

Moreover, important legally binding agreements (Rio Convention) were opened for signature:

- Convention on Biological Diversity[7]
- Framework Convention on Climate Change (UNFCCC)
- United Nations Convention to Combat Desertification

In order to ensure compliance to the agreements at Rio (particularly the Rio Declaration on Environment and Development and Agenda 21), delegates to the Earth Summit established the Commission on Sustainable Development (CSD). In 2013, the CSD was replaced by the High-level Political Forum on Sustainable Development that meets every year as part of the ECOSOC meetings, and every fourth year as part of the General Assembly meetings.

Critics point out that many of the agreements made in Rio have not been realized regarding such fundamental issues as fighting poverty and cleaning up the environment.

Green Cross International was founded to build upon the work of the Summit.

The first edition of Water Quality Assessments, published by WHO/Chapman & Hall, was launched at the Rio Global Forum.

(iii) Johannesburg Conference: Abstract: The World Summit on Sustainable Development (WSSD) was held in Johannesburg in 2002 to review progress since the Rio conference in 1992, and to agree a new global deal on sustainable development. Unlike its predecessor, it was primarily concerned with implementation rather than with new treaties and targets, although a number of new targets were agreed, for example one on sanitation. Failure to agree a target on renewable energy was regarded as a major disappointment of the conference. While relatively modest in its achievements, and with difficulties in achieving consensus in key areas such as energy, trade, finance and globalisation, WSSD nevertheless succeeded in placing sustainable development back on the political agenda, giving new impetus, in particular to the environment and development needs of Africa, with a strong focus on local issues like household energy, water and sanitation. Health was singled out as one of five priority areas, along with water, energy, agriculture and biodiversity, and was devoted a separate chapter in the resulting Plan of Implementation, which highlighted a range of environmental health issues as well as issues relating to health services, communicable and non-communicable diseases. A number of new partnerships were formed at WSSD, including the Healthy Environments for Children Alliance (HECA) launched by WHO, which will form an important platform for implementation. The Commission on Sustainable Development has been designated main responsibility for monitoring and follow up, with its programme of work reorganised to focus on thematic clusters of issues. From the perspective of health, WSSD must be seen as a reaffirmation of the central place of health on the sustainable development agenda, and in the broader context of a process which began in Rio and was given added impetus with the Monterrey Financing for Development conference and the World Trade Organisation meeting held in Doha. Translating policies into action at all levels- global to local – remains the single biggest challenge in the years that lie ahead.

> The world summit on sustainable development: reaffirming the centrality of health: It will be years before we can assess the true impact of the world's largest UN Summit, which brought together governments, the private sector and civil society to agree on a new global deal on sustainable development. Over one hundred Heads of State and Governments addressed the World Summit on Sustainable Development (WSSD) held in August 2002 in Johannesburg, South Africa [1], and over twenty two thousand people participated, including more than ten thousand delegates and eight thousand representatives of NGOs and civil society. It had as its key aims to review progress since the UN Conference on Environment and Development held in Rio in 1992 and to recommend measures to strengthen implementation of Agenda 21 (the global programme of action on sustainable development) and other outcomes of the Rio conference.

The term sustainable development, as originally defined by the 1987 World Commission on Environment and Development [2] (the "Brundtland Commission") was meant to entail "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". It was coined as part of an effort to bring environmental issues into the mainstream of development, recognizing that in order to address the escalating problems related to the environment, the root causes which lay in the broader development process and the global economic system needed to be addressed. As originally articulated "sustainable" captured the environmental issues (assumed to centre on the needs of future generations) while "development" captured the economic/poverty issues (assumed to centre on the needs of the present generation). The concept has since been broadened, in recognition of the non-environmental aspects of sustainability, and the non-economic aspects of development [3].

In some ways we are only now beginning to judge the success of the Rio conference held ten years earlier. In comparison with the WSSD, which was largely concerned with implementation rather than with new visions, treaties and agreements, Rio led to a dramatic new paradigm shift in thinking on sustainable development and to new legally binding agreements such as those concerned with biodiversity, and with climate change. Over the ensuing years however, there has occurred a dwindling in high-level political interest and engagement with sustainable development issues.

While WSSD in comparison with Rio was more modest in its immediate achievements, it nevertheless resulted in placing sustainable development back on the political and public agenda. New impetus was given to global action to protect the environment and fight poverty, with the development needs of Africa identified for special attention and support by the international community. A significant departure from Rio was a greater concern with social and economic issues-perhaps not surprising given that the conference was hosted by South Africa. There was also a stronger emphasis on local, as opposed to global, issues – for example with issues such as household energy, water and sanitation, rather than with the global problems associated with climate change which received so much attention in Rio.

The major outcomes of WSSD included a negotiated Plan of Implementation, a Political Declaration and a number of implementation partnerships and initiatives [1]. New targets and agreements were negotiated in a number of important areas, for example in sanitation. Previous agreements such as those relating to the achievement of the Millenium Development Goals [4], were also reaffirmed, making the Johannesburg Plan of Implementation a somewhat eclectic mix of new and past agreements and affirmations, albeit with many important implications for health.

One of the difficulties however was that so many of the key global issues – AIDS, biodiversity, climate change, trade – had their own conference processes, treaty and other mechanisms in place, such that WSSD could only serve to reaffirm these rather than cut new ground. The preparatory meetings preceding Johannesburg were characterized by difficult negotiations and attempts to achieve consensus on key aspects of the plan, particularly on energy, trade, finance and globalization. While consensus was eventually achieved in Johannesburg, contentious issues were often solved by falling back on previously agreed positions.

A separate chapter was included on globalization in the Plan of Implementation (strongly pushed for by the G77/China), which emphasized the need for successful completion of the Doha round of trade negotiations and the implementation of the Monterrey Consensus negotiated at the International Conference on Financing for Development held in Monterrey, Mexico. In addition, the final chapter dealing with means of implementation addressed also health-related commitments related to trade. Issues of contention included the mobilization of financial resources, and the EUs agricultural subsidies. Critics characterized the failure to go beyond Doha to reduce trade-distorting energy and agricultural subsidies in the rich countries as a shortcoming of the summit.

The issue of setting a time-bound target to reverse the trend in natural resource degradation caused disagreement among countries, as did references to the precautionary principle and the ecosystem approach, and the principle of "Common but Differentiated Responsibilities" agreed to in Rio. Other issues which were controversial included debate about the need for stronger governance at the international and national levels (the former emphasized by developing countries and the latter by developed countries), the role of the UN in follow up to WSSD, partnerships and their possible modalities, and the relationship between human rights and environmental protection.

> Centrality of Health: A significant departure from Rio was that health issues featured centrally in WSSD, reflecting increased recognition of health as a resource for, and as an indicator of, sustainable development. Already in 1992 the Rio Declaration stated that "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature." This stressed the important interlink ages between the social, economic and environmental pillars of sustainable development, all of which are underpinned by good health. Further, Chapter 6 of Agenda 21 emphasized the fundamental commitment within sustainable development to "protecting and promoting human health" .

At the WSSD there was a greater emphasis on development sectors, and health was singled out by the UN Secretary General as one of five priority issues, in what became known as the "WEHAB" initiative, with emphasis on water, energy, health, agriculture and biodiversity [6, 7]. Health was devoted a separate chapter in the negotiated Plan of Implementation [8], and health issues permeated the text throughout. A key message in the wide ranging health agenda at WSSD was that sustainable development cannot be achieved where there is a high prevalence of debilitating illnesses, and the health of the population cannot be maintained without a healthy environment.

Particular emphasis was placed on health issues in relation to environment and poverty concerns. At least a quarter of the global burden of disease can be attributed to environmental factors, many of them poverty-related. The Johannesburg agenda reflected a major shift in recent thinking which has occurred regarding the role of health in poverty reduction and development. Health is far more central to poverty reduction than previously thought, and that realization is now beginning to shape national and global policies [9].

While there were no major breakthroughs in health nor dramatic new agreements reached, a key aspect of significance was recognition of the importance of health in the context of environment, water, energy, agriculture, biodiversity and other issues. Indeed the conference called for a stronger emphasis on health and environment linkages – a move initiated by the Canadians with strong backing from WHO and UNEP.

> Environmental Health Issues: Improving access to safe water, sanitation, clean air, improved waste management and sound management of chemicals were among the key issues which received special attention in Johannesburg. Of particular note was the call for increasing access to sanitation to improve human health and reduce infant and child mortality, prioritising water and sanitation in national sustainable development strategies and poverty reduction strategies where they exist. A new target was eventually agreed, namely to halve by the year 2015 the proportion of people who do not have access to basic sanitation. This new target complements the Millennium Development Goal on access to safe drinking water, and was the subject of much acrimonious debate.

Another important agreement was to aim, by 2020, to use and produce chemicals in ways that lead to the minimisation of significant adverse effects on human health and the environment...taking into account the precautionary approach. Also called for was the promotion of reduction of risks posed by heavy metals that are harmful to human health and the environment.

An agreement to diversify energy supply and substantially increase the global share of renewable energy sources with the objective of increasing its contribution to total energy supply was significant (especially for its health implications), even though the Summit failed to reach agreement on a specific time-bound target. There was also an agreement to improve access to reliable and affordable energy services for sustainable development and resources sufficient to achieve the Millennium Development Goals. Many countries however, viewed the failure to set targets to increase the percentage of the world's power generated by renewable energy sources as the Summit's most significant missed opportunity. The EU reacted by announcing its intention to develop renewable energy sources according to a set timetable with like-minded countries.

Other aspects of note were the call to enhance health education (with the objective of achieving improved health literacy on a global basis by 2010), and an emphasis on capacity building to better assess health and environment linkages. The need to strengthen occupational health programmes was highlighted, as was the necessity of reducing air pollution exposures and related health impacts (including through use of cleaner fuels, modern pollution control techniques and reducing dependence on traditional fuel sources for cooking and heating), as well as controlling lead exposure through eliminating lead in petrol, paints and other sources of human exposure.

> Communicable and Non-Communicable Diseases

Reflecting the knowledge that has accumulated about how ill-health creates and perpetuates poverty, triggering a vicious cycle which hampers economic and social development, the WSSD was also concerned with addressing the main causes of avoidable death in low-income countries. These include HIV/AIDS, malaria, tuberculosis (TB), childhood infectious diseases, maternal and perinatal conditions, nutritional deficiencies and tobacco-related illnesses. There was a strong reaffirmation of targets and goals previously agreed, with emphasis on vulnerable groups such as women and children. While AIDS received due attention, it failed in many respects to be fully recognised as a key development issue at WSSD. This was somewhat surprising given previous concerns that AIDS might dominate the entire WSSD agenda.

A call was made to strengthen the capacity of health care systems to deliver basic health services to all, aimed at improving access to essential drugs, immunisation services, vaccines and medical technology, improving maternal and obstetric care and reproductive and sexual health. These commitments were made with an emphasis on meeting the Millenium Development Goals related to health, including reducing maternal and child mortality. One aspect of the health chapter that proved to be among the most contentious of the Summit and which was of the last to receive agreement on, related to references to "health care and services". There was concern among some that this could be construed to include abortion services. Specific measures to combat and treat HIV/AIDS, malaria, TB and other diseases were called for, with special emphasis placed on the need to mobilise financial resources and to support the Global Fund to Fight AIDS, TB and Malaria.

While many countries continue to see their development efforts hampered by the burden of communicable diseases, at the same time they are faced with the rising incidence of non-communicable diseases (NCDs). The rapid rise of NCDs is also threatening economic and social development as well as the lives and health of millions of people. They represent a major health challenge to global development in the coming century. Low- and middle-income countries suffer the greatest impact, and the rapid increase in these diseases disproportionately affects poor and disadvantaged populations; contributing to widening health gaps between and within countries. In this regard Johannesburg called for programmes to combat non-communicable diseases, mental health, injuries and violence and associated risk factors such as tobacco, alcohol, unhealthy diets and lack of physical activity. In addition, a ten-year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production (aimed at promoting social and economic development within the carrying capacity of ecosystems) was agreed, with industrialised countries taking the lead.

The Call for Integrated Strategies and Partnerships

Other aspects emphasised in the Plan of Implementation included the need to integrate health concerns into strategies, policies and programmes for poverty eradication and sustainable development, implementation of the WHO Health for All strategy [10], and creating more effective national and regional policy responses to environmental threats to human health, as well as encouraging health promoting production and consumption policies.

Addressing the underlying determinants of health through intersectoral efforts is key to ensuring sustained health improvements and ecologically sustainable development [11]. In this regard Johannesburg called for increased action from the international community, NGOs, the private sector and local communities to implement sustainable development objectives through partnerships and alliances at all levels- global to local. This represented a major departure from previous UN conferences and was strongly pushed by the US amid initial opposition from many in the G77 bloc, who feared that this would result in an abdication of responsibility away from governments in favour of the private sector and donor interests. Over 220 partnerships (including 16 in health) with 235 million dollars in resources were identified in advance of the summit and around 60 partnerships were announced during the Summit by a variety of countries, with many more announced outside of the formal proceedings.

With health unquestionably recognised as an intersectoral issue the health sector will have to seriously deliberate on its changing role in this complex international landscape. In many parts of the world intersectoral approaches and partnerships have been successfully developed to tackle particular diseases, both communicable (infectious) and non-communicable [3]. Much progress has been made in forging closer links between national health care and other sectors, particularly through local and national intersectoral health and development planning; increased use of planning tools such as health impact assessment procedures; integrated monitoring and surveillance systems; and improved health information systems and indicators [3].

Many countries have instituted new policy and planning frameworks over the past decade, and have developed tools to make health and environment concerns an integral part of the planning process. For example at the national level, National Environmental Health Action Plans have been developed and at the local level, Local Agenda 21 and related activities such as the WHO Healthy Cities Movement, and UN Habitat and UNEPs Sustainable Cities Movement have been important developments.

Effective health, environment and sustainable development policies and programmes depend however on convenient access to information about a large variety of hazards, ranging from biological hazards in food and water, to chemical hazards such as pesticides, to various physical and social factors. This is necessary if health authorities are to effectively discharge their responsibility to protect public health. But it also serves to clarify the extent to which health hazards are attributable to environmental conditions and/or to the activities of sectors other than health.

In general, knowledge of environment and health risks is segmented, and incomplete. Mechanisms to ensure coordination at national, regional and local levels regarding health effects assessment and the development of adequate reporting systems are commonly lacking. Equally, mechanisms are frequently not in place to ensure that such information, once obtained, is transmitted to the various relevant sectors for action. Integrated databases on development hazards, environmental exposures and health, are urgently required. Well-developed health-and-environment information systems, based on relevant data sets, are essential if scientific monitoring information is to be provided in support of policy and decision-making, planning and evaluation [13]. This is one of the key challenges to the health sector in taking forward the sustainable development agenda.

The Way Forward

The Summit called on all countries to take immediate steps to formulate national sustainable development strategies and to begin implementation efforts by 2005, with international cooperation supporting the special needs of developing countries. It recommended that Governments immediately enact and enforce clear and effective laws that support sustainable development, develop and strengthen the necessary infrastructure and promote public participation in implementation. Most implementation efforts will take place at the local, national and regional levels, with Governments bearing the primary responsibility.

The main responsibility for monitoring and reviewing progress in carrying out the Johannesburg decisions falls however with the UN Commission on Sustainable

Development, which is a functional commission of the UNs Economic and Social Council (ECOSOC). It was set up in 1992 to ensure effective follow-up of the UN Conference on Environment and Development held in Rio. The WSSD called for a strengthened Commission to play a larger role in promoting implementation, including by facilitating partnership initiatives and the sharing of best practices. The Commission has also been charged with developing indicators that will help to determine the state of conditions around the world and will be the basis for discussions on how to overcome obstacles to implementation [14].

The Commission on Sustainable Development has consequently been revitalized and its programme of work reorganised along a multi-year programme of work divided into seven two-year cycles (the first year devoted to a review of progress and the second to policy recommendations), with each cycle focusing on selected thematic clusters of issues. The thematic clusters of issues will be addressed in an integrated manner, taking account of the economic, social and environmental dimensions of sustainable development. Issues being addressed during the first cycle are water, sanitation and human settlements, while in 2006/2007 issues to be addressed are energy, industrial development, air pollution/atmosphere and climate change.

Already there has been much work underway at country level and the various partnerships created have been actively pursuing their respective agendas. This includes the Healthy Environments for Children Alliance (HECA) which was launched by WHO in conjunction with a number of other UN agencies, NGOs and governments [15]. While the Commission has responsibility for tracking partnerships, the partnerships themselves are voluntary and the Commission cannot hold them accountable through the same formal process to monitor government action. The UN has also created new mechanisms to help coordinate efforts in the area of water and energy, namely "UN Water" and "UN Energy" which will help to improve consistency, coherence and cooperation within the UN system.

From the perspective of health, importantly, Johannesburg must be seen as a reaffirmation of the central place of health on the sustainable development agenda. It must also be seen in the broader context of a process which began in Rio and which was given added impetus with the Monterrey Financing for Development Conference and the World Trade Organization meeting held in Doha. The health sector and its allies in other sectors must now muster the necessary resources and commitment to follow through on the sustainable development agenda, and translate policy into action which will ensure a more sustainable path of development for future generations to come.

Q.3) Elucidate the Constitutional provisions in India to protect Environment.

Ans: A rapid increase in global warming, deforestation, air, water and other forms of pollution is posing a great threat to the environment and its living beings. The degradation of the environment through a plethora of activities carried on by individuals is detrimental to the health of all the living beings, including human beings, plants and animals.

Fundamental status has been given to the concept of protecting the environment as it is essential to promote human health to have a healthy environment and affords a right to a healthy environment to all. Preserving the environment protects the health of every individual and a healthy individual promotes the development of the environment which is the need of the hour.

To live in an environment which provides a pollution free atmosphere is not only a basic human right but also enhances human dignity. Principle of sustainable development is one such approach which if followed can fulfil the basic human right of having a dignified life.

To know more about the scope of constitutional provisions for environmental protection in India in brief, please refer to the video below:

Law acts as a means of regularizing the human conduct and provides the smooth functioning of society. Since the word ‘Environment’ did not find its existence in the Indian Constitution, it became essential to insert provisions in the constitution as it is the supreme law of the land and such insertion thus, would prove to be fruitful to protect the environment from exploitation.

The preamble of the constitution and environment protection

The Preamble of Indian Constitution begins by stating that **people of India solemnly resolve to constitute India into a socialist country**. This indicates that our Constitution affords us with the socialist pattern of society. Thus, aiming at dealing with and solving social problems first, rather than concentrating on individual problems. Here, what is in the interest of the public is of utmost importance.

Presence of pollutants in the atmosphere in excess of the prescribed limit is one of the major social issues to be given due regard. It is not only exploiting the health of living beings but is also degrading the quality of the environment in each day.

The basic aim of Preamble is socialism and it is the responsibility of the state to fulfil this by taking stringent measures to make the environment free from all forms of pollution. The obligation of the state further includes providing not only a pollution free environment but also a decent standard of living to all living beings.

All the citizens of India intend to secure freedom which also includes securing justice. Justice can be interpreted and sought in many forms. Thus, citizens have a right to environmental justice. Increasing degradation of the environment is posing a great threat to the lives of living beings and hence, protecting the environment is becoming a crucial in each day of life because ignoring it would pose a serious threat to the environment at large.

The state has the duty to comply with all the provisions and since India is declared to be the **Democratic Republic,** the citizens of this country hold a very essential right to have looked upon the conduct of the state and provisions being taken by the government from time to time to restore the environment.

Legislative powers and matters of environmental protection

Under the Indian Constitution, there are three types of lists, namely- **Union, state and concurrent.**

Powers of the government are shared at the state and union level. Central government deals with the matters of **union list,** where state government deals with the matters of state list. Thus, the exclusive power to legislate the matters of union list, which is the **list I**, is with the Parliament. **State list** which is the **list II** covers matters like, sanitation, the health of the public, drainage, supply of clean water etc. It covers matters relating to defence, military, atomic energy, regulation of oil fields, air traffic etc.

Power of dealing with the matters of the **concurrent list (list III)** is shared between both the state and central government. It covers matters like protection of forests, wildlife, conserving mines, population control etc. But in the instance of conflict, the decision of the central government prevails.

The legislative and administrative relations between the central and the state government are specifically dealt in with the part XI of the Constitution. The power to make rules for the whole country is with the Parliament of the country, while for that of the state lies with the state government of every state.

In an instance of passing state laws subsequent to the central laws, for it to prevail, requires a Presidential assent first as in accordance with ***Article 254.***

In the situation of national emergency, Parliament has the power to legislate the state subjects also. The division of these legislative powers is essential to make provisions which can deal with environmental problems.

There are various projects taken up by the state to develop the environment but they might pose a serious threat to the environment. In such circumstances there is always a conflict between development and environment protection and such matters are dealt through the **Environment Impact Assessment (EIA).** This has also been recognized by the planning commission.

International Environmental Agreements

A plethora of international agreements dealing with environmental protection have been made and India has been a signatory to it. Because at the **Stockholm declaration in 1972**, it was held that the world has one environment. India being a signatory to such international pacts is under an obligation to translate those provisions and follow them in the country. This has been clearly stated in ***Article 51(c)*** of the Indian constitution that state shall foster respect for international law and the obligations of the treaties.

Another essential provision dealing in protecting the environment is ***Article 253*** of the Constitution which empowers the Parliament of our country to make laws which can be applicable to the whole or any territory of the country for implementing any agreement or convention signed with the other country or countries.

Parliament can further legislate to implement decisions taken at any conference on an international level. Any provision made in the context of environmental protection in accordance with ***Article 253*** read with articles 13 and 14 cannot be questioned before the court of law on the grounds of no legislative competence.

With the use of this power, it is pertinent to know that Parliament has enacted **Air (Prevention and Control of Pollution) Act 1981, and Environment Protection Act, 1986.** It has been clearly stated in the Preamble of these acts that the purpose of their enactment was to implement the decisions taken at the United Nations Conference on the Human Environment, held at Stockholm in the year 1972.

In ***Vellore Citizens' Welfare Forum v. Union of India****,* the supreme court held that it is essential to incorporate the international customary laws in the municipal laws, provided they are not contrary to them. It is an accepted principle of law. Thus, it was considered essential to follow international laws by the domestic courts of law.

Obligation of State and Environmental Protection

The authorities are under the obligation to follow the law and regularize the conduct for the benefit of the people who have elected them. ***Article 47*** puts an obligation on the state that it shall regard the raising level of nutrition and standard of living of its people. Also, the primary duty of the state shall be to improve public health. It is the responsibility of the state to prohibit except for medicinal purposes, the consumption of alcohol and drugs which can be injurious to the health of the living beings and pose a great threat to their lives.

From the word "responsibility" it can be interpreted that state shall take effective, adequate and necessary steps to improve the health and standard of living of all and promote awareness in the context of environmental protection. In the environment development projects cannot be taken up by the individuals which harm society as a whole. Thus, the state needs to keep a stringent check on these activities and projects.

There have been various reasons due to which level of pollution in the environment is constantly increasing. For eg., water pollution is commonly caused due to the draining of impure water in the rivers and which not only pollutes the natural resource of the country but affects the health of citizens. This lead to the urgent need of making provisions to obligate the state to preserve and protect the environment.

In the case of ***Hamid Khan v. State of Madhya Pradesh,*** the state was negligent to supply water from the handpumps, colossal damage was caused to the citizens, which affected their health massively. Hence, due to this gross negligence on the part of the state, it was held that the state failed to perform its basic duty.

In the year 1976, the constitution was amended. With this amendment, ***Article 48-A*** was inserted in the constitution with the aim to afford better provisions so as to preserve and protect the environment. The provision of this article imposes the duty on the state to protect and improve the environment and safeguard the forests and wildlife of the country. The word "Environment" has been interpreted widely in this article. The state shall not only play a role of being protectionists but also enact adequate measures for improvement of the environment.

Every natural resource is interconnected with other natural resources of this country. Forests are directly linked with providing pollution-free air, helps in reducing global warming and is also connected with water resources. They help in maintaining the ecological balance. Thus, this resource is crucial and hence, its protection is equally important to avoid atmospheric pollution. Hence, the specific insertion of this section is justified.

Obligation of citizens and environmental protection

The duties of the state in protecting the environment are basically the rights of the citizens. The concept of rights and duties respectively, co-*exist*. They are interconnected. If citizens have the right to a decent standard of living and a pollution free environment, then at the same time they are obliged to protect it and not carry on activities which prove to be dangerous for the society at large and all other living beings.

The concept of rights was quite prevalent in comparison to the concept of duties prior to the 42nd amendment of the constitution. More importance was attached to rights than duties by the supreme law of the land. But the drafters of the constitution felt that it is necessary to shoulder the burden of protecting environment between both the state and the citizens. Also, citizens were more concerned with their rights and started neglecting their duties. Thus, **part IV–A** was inserted by The Constitution (Forty Second) Amendment Act,1976.

Part IV-A of the constitution deals with Fundamental Duties. ***Article 51-A(g)*** specifically deals with the fundamental duty of the citizens to protect and improve the natural environment which includes forests, rivers, lakes, wildlife and to have compassion for living creatures. Like the duty of the state, it is the duty of all the citizens of not only protecting the environment but also taking measures which are adequate enough to improve the environment.

Nature has gifted us with the resources and a pollution free environment and thus, this casts a duty upon the citizens to keep these resources in the same condition for the future generations. Hence, the principle of intergenerational equity plays a major role in environmental protection by sustainable use of natural resources.

In ***Kinkeri Devi v. State***, Himachal High Court that in ***Article 48-A and Article 51-A(g)*** it was held that it is both constitutional pointer to the state and the constitutional duty of the citizens not only protect the environment but also improve it and to preserve and safeguard the forests, the flora and the fauna, the rivers and the lakes and all other water resources of the country.

The negligence to abide by the pointer or perform the duty is nothing basically the straight betrayal of the fundamental law of the land.

In the case of betrayal, the courts cannot remain a silent spectator. A court can intervene at any time to make the implementation of the provisions by issuing writs, orders and directions as it thinks fit and necessary.

In ***L.K Koolwal v. State of Rajasthan and Ors,*** the municipality of Jaipur was being negligent in carrying on its basic duty of maintaining the hygiene of the state. This caused acute sanitation problem thereby leading to the to have hazardous effects on the lives of the people of the state. Mr Koolwal along with other residents moved an application under ***article 226*** of the Indian constitution before the high court highlighting the gross negligence of the municipality.

While construing the true scope of ***Article 51-A*** in this case the court explained that this article is not only a duty but is aright created in favour of the citizens to have the locus standing to move to the court to have a check on the conduct of the state activities, whether the authorities are performing their duties or not in accordance with the fundamental law of the land. The right to move to the court is granted to citizens for the proper enforcement of the state's duties and of their relevant departments, local bodies etc.

Being negligent in maintaining hygiene and sanitation standards slowly affects the lives of living beings and poisons the environment at large. This infringes the fundamental right of life of the citizen as provided under ***article 21,*** which also extends to have a decent standard of living and a clean and safe environment and thus, citizens protecting their fundamental right to life from being infringed is justified. Thus, the court directed the municipality to remove the dirt and all the filthy material which was posing a great threat to the lives and health of the people.

In another case of ***Goa Foundation v. the State of Goa***, the petitioner was a society registered under the rules relating to registration of societies and its members were the citizens of India who had a fundamental duty to protect and improve the environment, lakes, forests, rivers and have compassion for living creatures as laid down under a***rticle 51-A*** . The question of whether the society had locus standi to move to the court or not was raised before the court.

The answer to this question was given in a very affirmative manner by the court and was held that the society had the same fundamental duty. Petitioner was held to have a locus standi to move to the court to not only prevent degradation of our ecology but also form and implement provisions for the purpose of rehabilitating the ecology thereby maintaining ecological balance.

Public interest litigation was filed before the high court by five persons, who were residents of a specific area, in the case of ***Sitaram Champaran V. State of Bihar*** to seek the directions of the court for the closure of the tyre retreading plant, in the interest of public health. This plant was situated in the residential area and was emitting carbon dioxide along with other obnoxious gases causing harm to the environment. The respondents were directed to wind up the plant in the interest of environmental protection and were considered a fundamental duty under ***Article 51-A.***

Right to life and Environment Protection

Article 21 of the constitution provides for the fundamental right of life. It states that no person shall be deprived of his right to life or personal liberty except in accordance with procedures established by law. The words “except in accordance with procedures established by law” can be interpreted to mean that this provision is subject to exception and is regulated by law which varies from case to case.

Since the provision begins with the word ‘no’ that is the reason it has been given a negative impact. But post-Maneka period this provision has been given a positive interpretation and positively casts a duty on the state to enforce the due implementation of this law.

Right to life includes the right to have a dignified life and also the bare necessities of life like food, shelter, clean water and clothes. The right to live extends to having a decent and clean environment in which individuals can live safely without any threat to their lives. An environment shall be free from diseases and all sorts of infections.

This is crucial because the right to life can be fulfilled only when one lives in a clean, safe and disease-free environment, otherwise granting such right would prove to be meaningless. This aspect of ***Article 21*** has been evidently discussed in the case of ***Rural Litigation and Entitlement Kendra, Dehradun v. State of Uttar Pradesh,*** where the petitioner along with the other citizens wrote to the supreme court expressing their views against the progressive mining which denuded the Mussoorie hills of trees and forests and soil erosion. This lead to having an adverse effect on the environment and resulted in landslides along with blockage of underground water channels.

The registry was ordered by the Hon’ble supreme court to consider this letter as a writ filed under ***article 32*** of the Constitution.

An expert committee was appointed in this behalf by the Supreme Court to advise the Hon'ble court with some technical issue. On the basis of the report provided by the expert committee, the court provided the limestone quarries to be closed because it was infringing the right to life and personal liberty. Quarrying operations lead to ecological degradation and air and water pollution, which affected the lives of the people to a great extent.

In ***L.K Koolwal v. State of Rajasthan and Ors*****,** Rajasthan High Court held that maintaining the quality of the environment, sanitation and health is covered under the purview of Article 21 of the Constitution. Because non-compliance to do so can adversely affect the lives of many citizens and slow poisoning along with reducing the life of a citizen.

In ***Charan Lal Sahu v. Union of India,*** it was held that the duty of the state is to take adequate and effective steps for the enforcement and protection of Constitutional rights guaranteed under ***Article 21, 48-A and 51-A(g)***.

In ***M.C Mehta v. Union of India***, due to stone crushing activities in and around Delhi was causing a huge problem of pollution in the environment. The court was conscious of the inevitable consequences and the ecological problems caused due to the industrial activities in the country. In the name of environmental development, it cannot be permitted to degrade the quality of the ecology and increase different forms of pollution to the extent that it becomes a health hazard to the lives of all the citizens. It was further held that citizens have a right to fresh air and have a pollution-free environment in which they live.

Further, the scope of ***article 21*** was broadened by the judiciary to include under its purview the right to livelihood as well. It includes the right of citizens to earn their livelihood along with the right to life. The wider interpretation of this article has proved to be beneficial in keeping a strict check on the conduct and actions of the government in the context of measures taken by the authorities to protect the environment. It is also beneficial in keeping a check on the activities of the state which can have a massive impact on the environment, health of the individuals and threat to the livelihood of poor.

Indian judiciary has been very conscious while dealing with the matters of development and the environment protection to avoid the conflict between the two aspects.

In the famous Taj Mahal Case, ample of industries near **Taj Trapezium Zone** were using coke and coal as an industrial fuel. These industries were ordered to be relocated to an alternative site as provided under Agra Master Plan. The rights and duties of the workmen in the industries were also specified by the court following the principle of sustainable development.

Right To Equality and Environmental Protection

Equality before the law and equal protection of the law has been granted under ***article 14*** of the Constitution. This fundamental right impliedly casts a duty upon the state to be fair while taking actions in regard to environmental protection and thus, cannot infringe article 14. In cases of exercise of arbitrary powers on behalf of the state authorities, the judiciary has played a strict role in disallowing the arbitrary sanction. Use of discretionary powers without measuring the interest of the public violates the fundamental right of equality of the people.

In ***Bangalore Medical Trust V. B.S Muddappa***, an improvement scheme was prepared by the City Improvement Board of Bangalore for the purpose of extending the city. A low-level park was to be developed for which an area was kept under this scheme. But under the direction of the chief minister the area kept for the low-level park was to be converted into the civic amenity site where the hospital was to be constructed. As soon as the construction began, the residents moved to the high court.

The petition moved in by the residents was allowed by the high court. But in appeal to the supreme court, the appellant contended that the power to allot sites is completely a discretionary one and the developing authority has the right to allow the site for making hospital rather than a park. And thus, the diverted use of the land was justified in the eyes of the appellant.

By explaining the importance of open spaces and parks in the development of urban areas, the supreme court rejected the appeal. The Hon'ble court further stated that the open spaces, recreation, playing grounds and protection of ecology are the matters of vital importance in the interest of public and crucial for the development. Keeping open spaces for the interest of the public is justified cannot be sold or given on lease to any private person solely for the sake of monetary gains.

Freedom of Speech and Expression and Environment

Right of speech and expression is a fundamental right expressly mentioned in ***article 19(1)(a)*** of Part III of the Constitution. There have been a number of cases where people have approached the court through the way of speech and expressing themselves by writing letters like that in the case of ***Rural Litigation and Entitlement Kendra, Dehradun v. State of Uttar Pradesh*** where they have expressed the violation of their right to have a clean and safe environment and a right to livelihood.

In India, the media has been playing a crucial role in moulding the perception of people in issues relating to the environment. Thus, ***Article 19(1)(a)*** is interpreted to include the freedom of the press as well.

Freedom of Trade and Commerce and Environmental Protection

All the citizens of India have a fundamental right to carry on any profession or business, trade or commerce at any place within the territory of India under ***Article 19 (1)(g)*** of the Constitution. But this is not an absolute right and thus, has reasonable restrictions to it. Article 19(6) of the Constitution lays down the reasonable restriction to this fundamental right to avoid the environmental hazards.

The purpose is to avoid the ecological imbalance and degradation of the atmosphere in the name of carrying on a trade, business, occupation or carrying on any profession. Thus, in the name of business or profession, one cannot cause harm to the environment.

In ***M.C Mehta v. Union of India, AIR 1988 SC 1037*** certain tanneries were discharging effluents in the holy river Ganga which was causing water pollution. Further, no primary treatment plant was being set up despite the constant reminders. It was held by the court to stop the tanneries from working because the effluents drained were ten times more noxious as compared to the ordinary sewage water which flows into the river.

The court ordered while directing tanneries to be stopped from working which have failed to take necessary steps as required for the primary treatment of effluents from the industries. The court while passing this order contended that, though the court is conscious about the unemployment that might usher due to the closure of the tanneries but **health, life and ecology holds greater importance in the eyes of law.**

In **M.C Mehta v. Union of India, 1994,** it was directed by the Supreme Court that the industries who did not comply or adhere to, with the prior direction of the Hon'ble court regarding the installation of air pollution controlling system should be closed. In this case, the supreme court laid down its greater emphasis on ***Article 19(6)*** of the Constitution.

In ***S. Jagannath v. Union of India ,*** sea beaches and sea coasts were considered to be the gifts of nature, by the Hon'ble supreme court and any such activity which pollutes these natural resources or the gift of nature cannot be permitted to function. In this case, a shrimp farming culture industry by modern method causing degradation to the ecosystem, discharge of polluting effluents, polluting the potable ground-water and depletion of the plantation. All of these activities were held to be violative of constitutional provisions and other legislation dealing with environmental matters, by the court.

The court further held that before the installation of any such industry in a fragile coastal area it is essential for them to necessarily pass the strict environmental test. In other words, reasonable restrictions can be laid in accordance with **Article 19(6)** of the Constitution.

Role of the Supreme Court in environmental protection

In lieu of the wide range of cases dealt by supreme court with regard to environmental protection, a plethora of judgements have been passed which have laid down various principles to be taken care of before indulging in any activity which might pose a threat to the environment. Also, different aspects of the environment have been highlighted by giving them immense importance like natural resources. Air and water have been given the status of the gift of nature and inalienable part of life.

While incorporating the important features to the fundamental right provided in Article 21, certain principles were ascertained by the supreme court to be necessarily ensured for the protection of the atmosphere, which are as follows-

Q.4) Polluter Pays Principle

Ans: The basic concept behind this principle is that “ if you make a mess, it becomes your duty to clean it up”. The polluter pays principle does not lay emphasis on the ‘fault’ rather on the curative approach to repair the ecological damage caused by any person or group of persons. This principle was for the first time referred to in the year 1972 in the OECD Guiding Principles concerning International Economic Aspects of Environmental Policies.

Further, this principle was also applied in the case of ***Vellore Citizens Welfare Forum v. Union of India. In M.C Mehta v. Union of India and Ors(Calcutta Tanneries Case),*** the polluter pays principle was applied where industries were directed to be relocated and these industries were ordered to pay 25% of the cost of the land.

The industries which did not pay the cost of the land and did not comply with the direction of the court were further directed to be closed. The Hon’ble court again restored to the directions which were earlier given in the ***Vellore Citizens Welfare Forum v. Union of India.***

Precautionary Principle

Principle 15 of the Rio Declaration provides for the precautionary principle. According to this. In order to protect the environment, it is essential to apply the precautionary principle. This principle means that where there is a chance of great threat or irreversible damage to the environment, lack of full scientific certainty cannot be taken as a reason of not issuing the cost-effective methods.

In ***M.C Mehta v. Union,*** popularly known as Taj Mahal Case, was another judgement of the court passed on the basis of the precautionary principle. In this case, public interest litigation was filed alleging the degradation of Taj Mahal due to environmental pollution. Court referred the case to the expert committee to seek technical on the matter. On the basis of the report of the committee. This monument is a monument of international repute. The industries located in the **Taj Trapezium Zone(TTZ)** were using coke/coal as the industrial fuel, thus emitting effluents.

It was held by the court that, the Taj apart from being a cultural heritage, is also an industry by itself and thus, it was directed to all the industries operating in TTZ to use natural gas as a substitute for coke/coal as an industrial fuel and if they cannot be restored to it for any reason, they must stop functioning and they may relocate themselves as per directions of the .`The industries on the relocation in new areas were to be given the incentives.

The doctrine of Public trust

This doctrine rests on the principle that certain resources which are required for fulfilling the basic amenities of life like air, water etc hold great importance to the people at large that it would be completely unjustified to make these resources available to the private ownership. Since these resources are the gift of nature that is why they should be made freely available to every individual of the society irrespective of the status in life. The doctrine obliges the government to protect resources for public use rather than being exploited by a private person for making economic gains.

Thus, commercial use of natural resources is completely prohibited under this doctrine. For the effective and optimum utilization of resources, this doctrine mandates an affirmative action of the state authorities. Also, citizens are empowered to question the authorities if resource management is ineffective.

In ***M.C Mehta v. Kamal Nath,* 1997, the** state government granted a lease of riparian forest land to a private company having a mote located at the bank of river Beas, for commercial purposes. The hotel management was intervening with the natural flow of the river by blocking the natural spill channel of the river. This was questioned before the court through public interest litigation. The court explained the scope of public trust doctrine and observed that the doctrine rests on the primary principle that certain resources like air, water, sea and forests have great importance to people and it would be unjustified to make them subject to the private ownership.

Q.5) Sustainable Development.

Ans: The term sustainable development was for the first time used at the cocoyoc declaration. Thereafter it received further impetus through the Stockholm declaration where it was held that the world has just one environment and the man is both the creator and moulder of the environment. Further, in the Brundtland report, the definition of sustainable development was given according to which it is the optimum utilization of resources for both the present and future generations. Thus, intergenerational equity is a must. Resources have to be protected for both the present and future generations.

This article begins with laying down emphasis on why environmental protection is necessary, why did a need arise to protect the environment followed by the causes of ecological degradation in the introductory part. Various reasons have been considered to be a major factor in polluting the environment and affecting the lives of the people and posing a great threat to other living beings of the country.

In earlier times, the word “environment” was not specifically mentioned in the Constitution and no specific provisions were laid down in the Constitution to deal with the environmental hazards and to regulate the activities of the people who thereby were contributing a huge part in degrading the quality of the environment in the name of exercising their fundamental rights. The constitution is the supreme law of the land. Thus, inserting the clauses to specifically deal with the environmental issues would prove to be beneficial for the environment.

42nd Amendment to the Indian Constitution proved to be a solution for this major health hazard. The provisions in the article begin with highlighting the provisions from the base. Starting from the words **democratic, socialist and republic used** in the **Preamble** to the Constitution and its connection with the protection of the environment. Followed by duties of the state to protect the environment as being an authority elected by the people they are obliged to work for the people. Then the concept of rights and duties has been dealt with, wherein the right of a citizen to have a healthy environment has been mentioned and also the duties of citizens towards the environment in which they live to protect and preserve it.

A number of landmark cases have been mentioned to make the concept even more clear and how this plethora of judgements have clearly mentioned the importance to protect this environment. It can also be concluded that the supreme court has played a major role in laying down the environmental jurisprudence. Also, fundamental rights are essential and cannot be infringed upon but in accordance with the reasonable restrictions can be dealt with.

To have a healthy environment is so essential because a healthy environment promotes good health of the greater number which leads to less diversion of resources or spending of the huge amount of money on the treatment of the people. In these situations, the poor suffer the most as they do not have enough resources to afford their health issues. Moreover, healthy beings are valuable assets for the country who when healthy and fit can contribute much towards the economy and develop the nation thoroughly by paving a path of progress, generating employment and increasing the GDP.

Q.6) Salient features of Water Prevention and Control of Pollution Act 1974.

Ans: To implement the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June 1972, Parliament enacted the nationwide Air (Prevention & Control of Pollution) Act under Article 253 of the Constitution of India. The Act’s statement of objects and reasons contained the governments’ explanation of the contents and the scope of the law and its concern for the detrimental effect (air pollution) on the health of the people as also on animal life, vegetation and property. The Air Act's framework is similar to the one created by its predecessor, the Water Act of 1974. To enable an integrated approach to environmental problems, the Air Act expanded the authority of the Central and State Boards established in the Water Act to include air pollution control. States which have not constituted the Water Pollution Boards were required to constitute Air Pollution Boards.

Under the Air Act, all industries operating within designated air pollution control areas must obtain consent (permit) from the State Boards.

Prior to its amendment in 1987, the Air Act was enforced through mild Court administered penalties on violators. The 1987 amendment strengthened the enforcement machinery and introduced stiffer penalties. Now, the Boards may close down a defaulting industrial plant or may stop its supply of electricity or water.

Object of the Air (Prevention & Control of Pollution) Act, 1981:

The object of the Act is stated in the Long Title of the Air Act,

An Act to provide for the prevention and control of air pollution for the establishment with a view to carrying out the aforesaid purposes, of Boards for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected there with. Whereas decisions were taken at the United Nation Conference on the Human Environment held in Stockholm in Junen1972 in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which amount other things include the preservation of quality of air and control of air pollution and whereas it is considered necessary to implement the decisions aforesaid in so far as they relate to the preservation of the quality of air and control of air pollution.

Key Definitions: Section 2 of the Air Act deals with the definitions.

The important ones are as follows :

1. Air Pollutant: Section 2(a)

Air Pollutant means any solid, liquid and gaseous substance including noise present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

2. Air Pollution: Section 2(b)

Air Pollution means the presence in the atmosphere of any air pollutant.

3. Emission: Section 2(j)

Emission means any solid or liquid or gaseous substance coming out of any chimney, duct or flue or any other outlet.

4. Occupier: Section 2(m)

Occupier in relation to any factory or premises means the person who has control over the affairs of the factory or the premises and includes in relation to any substance the person in possession of the substance.

Constitution of the State Air Pollution Control Board:

Section 5 of the Air Act gives the constitution of the State Air Pollution Control Board.

In any State in which the Water Act , 1974 is not in force or that Act is in force but the State Government has not constituted a State Board under Water Act, the State Government shall with effect from such date as it may be, by notification in Official Gazette, appoint, constitute a State Board for the prevention and control of air pollution under such name as may be specified in the Notification, to exercise the powers conferred on and perform the functions assigned to that Board under this Act.

A State Board under this Act shall consist of the following members namely :

a. A Chairman, having a special knowledge or practical experience in respect of matters relating to environmental protection, to be nominated by State Government. He may be whole time or part time as the State Government may think fit.

b. Such number of Officials, not exceeding five as the State Government may think fit, to be nominated by the State Government to represent that Government.

c. Such number of persons, not exceeding five as the State Government may think fit, to be nominated by the State Government from amongst the members of the local authorities functioning within the State.

d. Such number of persons, not exceeding three as the State Government may think fit, to be nominated by the State Government to represent interest of agriculture, fishery or industry or trade or labour or any other interest which in the opinion of that Government ought to be represented.

e. Two persons to represent the Companies or Corporations owned, controlled or managed by State Government to be nominated by that Government.

f. A full time Member Secretary having practical experience in respect of matters relating to environmental protection and having administrative experience, to be appointed by the State Government.

State Government shall ensure that not less than two of the members are persons having special knowledge or practical experience in respect of matters relating to the improvement of the quality of air or the prevention, control or abatement of air pollution[3].

A Board shall be :

1. Body Corporate with name by State Government

2. Perpetual Succession

3. Common Seal

4. Acquire and dispose of properties

5. Contract

6. Can Sue and be Sued.

Powers and Functions:

Powers :

1. No person shall without the previous consent of the State Board, establish or operate any industrial plant in an Air Pollution Control Area.

2. State Board may make inquiry in respect of application for consent referred above.

3. State Board may grant or refuse the application referred above.

4. State Board shall have right to enter, at all reasonable times with such assistance as it considers necessary to any place.

5. State Board is empowered to call for any information from the occupier or any person carrying on any industry or operating any control equipment or industrial plant.

6. State Board shall have right to inspect the premises where industry, control equipment or industrial plant is being carried on or operated.

7. State Board has right to take, for the purposes of analysis, samples of air or emission from any chimney, flue or duct or any other outlet.

Functions:

a. To plan a comprehensive programme for the prevention, control or abatement of air pollution and to secure the execution thereof.

b. To advise the State Government on any matter concerning the prevention, control or abatement of air pollution.

c. To collect and disseminate information relating to air pollution.

d. To collaborate with Central Board in organizing the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of air pollution and to organize mass education programme relating thereto.

e. To inspect, at all reasonable times, any control equipment, industrial plant or manufacturing and to give, by order, such directions to such persons as it may consider necessary to take steps for the prevention, control or abatement of air pollution.

f. To inspect Air Pollution Control Areas at such intervals as it may think necessary, access the quality of air therein and take steps for the prevention, control or abatement of air pollution in such areas.

g. To lay down, in consultation with the Central Board and having regard to the standards of the quality of air laid down by the Central Board, standards for emission of air pollutants into the atmosphere from industrial plants and automobiles or for the discharge of any air pollutant into the atmosphere from any other source whatsoever not being a ship or an aircraft.

Provided that different standards for emission may be laid down under this clause for different industrial plants having regard to the quantity and composition of emission of air pollutants into the atmosphere form such industrial plants.

h. To advise State Government with respect to the suitability of any premises or location for carrying on any industry which is likely to cause air pollution?

i. To perform such other functions as may be prescribed or as may from time to time be entrusted to it by the Central Board or the State Government.

j. To do such other things and to perform such other acts as it may think necessary for the proper discharge of its functions and generally for the purpose of carrying into effect the purposes of the Act.

A State Board may establish or recognize a laboratory to enable the State Board to perform its functions under this Section efficiently.

Q. 7) Controlling Agencies of Water Prevention and Control of Pollution Act 1974.

Ans: Water (Prevention & Control of Pollution) Act, 1974 is a comprehensive legislation that regulates agencies responsible for checking on water pollution and ambit of pollution control boards both at the centre and states. The Water (Prevention & Control of Pollution) Act, 1974 was adopted by the Indian parliament with the aim of prevention and control of Water Pollution in India. Some of the important sections regulating the prevention of water pollution as per the act are as discussed below.

Functions of the State Board

Section 17 of the Water (Prevention & Control of Pollution) Act, 1974 clearly lists all functions of the respective state boards for countering water pollution. The state board of respective states is empowered to plan a comprehensive program for the prevention, control or abatement of pollution of streams and wells, collect and disseminate information relating to water pollution and encourage, conduct and participate in investigations and research relating to problems of water pollution and prevention.The state water boards also have the right to inspect sewage or trade effluents, works and plants for the treatment of sewage and trade effluents and to review all water purification plants. The Board may establish or recognize a laboratory or laboratories to enable the Board to perform its functions under this section efficiently, including the analysis of samples of water from any stream or well or of samples of any sewage or trade effluents.

Consent of the State Board is necessary to discharge sewage

Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 states that Prior Consent of the State Board under section 25 is necessary to set up any industry, plant or process which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land or bring into use any new or altered outlets for the discharge of sewage or begin to make any new discharge of sewage. The section further states that every StateBoard is liable to maintain a register containing particulars or conditions imposed under the section related to any outlet, or to any effluent, from any land or premises which must be open to inspection by the state board.

Power to take emergency measures

Section 32 of the Water (Prevention & Control of Pollution) Act, 1974 describes the power to take emergency measures in case of pollution of stream or well. Under the act, State Board may issue orders to re move the matter, which is, or may cause pollution; or remedy or mitigate the pollution, or issue prohibition orders to the concerned persons from discharging any poisonous or noxious or polluting matter.Section 24 and 43 of the Water (Prevention & Control of Pollution) Act, 1974 relate to prohibition on use of stream or well for disposal of polluting matter and penalty for contravention thereof Under the scope of the provision, no person shall knowingly cause or permit any poisonous, noxious or polluting mater as determined by the State Board to enter into any stream or sewer or on land. Anyone failing to abide by the laws of under is liable for imprisonment under Section 24 & Section 43 ranging from not less than one year and six months to six years along with monetary fines. The section further states that No person shall knowingly cause or permit to enter any other matter which may impede the flow of water of the stream causing pollution of any kind.

Penalties and fines

Section 42 of the of the Water (Prevention & Control of Pollution) Act, 1974 states penalties and fines for certain acts including pulling down pillars, Obstructs any person acting under the orders or direction of the Board, Damages any works or property belonging to the Board and Failure to furnish any officer other employee of the Board any information required. The fine and penalty includes Imprisonment for a term which may extend up to three months or with fine to Rs. 10,000/- or both.

Understanding Water Class

Depending on the pollution of the water, water is demarked under various water classes in accordance with the Water (Prevention & Control of Pollution) Act, 1974. Drinking water at source found without conventional treatment but after disinfection is designated as Class A while water designated for outdoor bathing comes under Class B. Any drinking water source which has been conventionally treated comes under Class C while water used for propagation of wildlife and fisheries is demarked as Class D. Water under Class E is used for irrigation and industrial cooling along with waste disposal.

Some Key Points of Water Act 1974

- Water Act 1974 aims to prevent and control water pollution.

- Under Water Act, 1974, pollution control boards were created, who are responsible for implementation of its provisions.

- One of the important provision of the Water Act, 1974 is to maintain and restore the 'wholesomeness' of our aquatic resources.

- Under Water Act 1974, Sewage or pollutants cannot be discharged into water bodies including lakes and it is the duty of the state pollution control board to intervene and stop such activity.

- Anyone failing to abide by the laws of under is liable for imprisonment under Section 24 & Section 43 ranging from not less than one year and six months to six years along with monetary fines.

Q.8) Discuss the provisions laid down in the Environment (Protection) Act 1986 for the prevention, control and abatement of Environmental Pollution.

Ans. An Act to provide for the protection and improvement of environment and for matters connected therewith. Whereas the decisions were taken at the United Nations Conference on the Human Environment held at Stockholm in June, 1972, in which India participated, to take appropriate steps for the protection and improvement of human environment; And Whereas it is considered necessary further to implement the decisions aforesaid in so far as they relate to the protection and improvement of environment and the prevention of hazards to human beings, other living creatures, plants and property;

GENERAL POWERS OF THE CENTRAL GOVERNMENT:

Power of Central Government to take measures to protect and improve environment - (1) Subject to the provisions of this Act, the Central Government, shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution. (2) In particular, and without prejudice to the generality of the provisions of subsection (1), such measures may include measures with respect to all or any of the following matters, namely:- (i) co-ordination of actions by the State Governments, officers and other authorities- (a) under this Act, or the rules made there under, or (b) under any other law for the time being in force which is relatable to the objects of this Act; (ii) planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution; (iii) laying down standards for the quality of environment in its various aspects; (iv) laying down standards for emission or discharge of environmental pollutants from various sources whatsoever: Provided that different standards for emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources; (v) restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards; (vi) laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents; (vii) laying down procedures and safeguards for the handling of hazardous substances; (viii) examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution; (ix) carrying out and sponsoring investigations and research relating to problems of environmental pollution; (x) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider necessary to take steps for the prevention, control and abatement of environmental pollution; (xi) establishment or recognition of environmental laboratories and institutes to carry out the functions entrusted to such environmental laboratories and institutes under this Act; (xii) collection and dissemination of information in respect of matters relating to environmental pollution; (xiii) preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution; (xiv) such other matters as the Central Government deems necessary or expedient for the purpose of securing the effective implementation of the provisions of this Act. (3) The Central Government may, if it considers it necessary or expedient so to do for the purpose of this Act, by order, published in the Official Gazette, constitute an authority or authorities by such name or names as may be specified in the order for the purpose of exercising and performing such of the powers and functions (including the power to issue directions under section 5) of the Central Government under this Act and for taking measures with respect to such of the matters referred to in sub-section (2) as may be mentioned in the order and subject to the supervision and control of the Central Government and the provisions of such order, such authority or authorities may exercise and powers or perform the functions or take the measures so mentioned in the order as if such authority or authorities had been empowered by this Act to exercise those powers or perform those functions or take such measures. 4. Appointment of officers and their powers and functions - (1) Without prejudice to the provisions of sub-section (3) of section 3, the Central Government may appoint officers with such designation as it thinks fit for the purposes of this Act and may entrust to them such of the powers and functions under this Act as it may deem fit. (2) The officers appointed under sub-section (1) shall be subject to the general control and direction of the Central Government or, if so directed by that Government, also of the authority or authorities, if any, constituted under subsection (3) of section 3 or of any other authority or officer. 5. Power to give directions - Notwithstanding anything contained in any other law but subject to the provisions of this Act, the Central Government may, in the exercise of its powers and performance of its functions under this Act, issue directions in writing to any person, officer or any authority and such person, officer or authority shall be bound to comply with such directions.

. Rules to regulate environmental pollution - (1) The Central Government may, by notification in the Official Gazette, make rules in respect of all or any of the matters referred to in section 3. (2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:- (a) the standards of quality of air, water or soil for various areas and purposes; (b) the maximum allowable limits of concentration of various environmental pollutants (including noise) for different areas; (c) the procedures and safeguards for the handling of hazardous substances; (d) the prohibition and restrictions on the handling of hazardous substances in different areas; (e) the prohibition and restriction on the location of industries and the carrying on process and operations in different areas; (f) the procedures and safeguards for the prevention of accidents which may cause environmental pollution and for providing for remedial measures for such accidents.

. Penalty for contravention of the provisions of the act and the rules, orders and directions - (1) Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued thereunder, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention. (2) If the failure or contravention referred to in sub-section (1) continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which may extend to seven years. 16. Offences by companies - (1) Where any offence under this Act has been committed by a company, every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly: Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

17. Offences by Government Departments - (1) where an offence under this Act has been committed by any Department of Government, the Head of the Department shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly. Provided that nothing contained in this section shall render such Head of the Department liable to any punishment if he proves that the offence was committed without his knowledge or that he exercise all due diligence to prevent the commission of such offence. (2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a Department of Government and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any officer, other than the Head of the Department, such officer shall also be

deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Q.9. Noise pollution and Legal Control.

Ans: Noise pollution is unwanted sound; it needs to be controlled to make the workplace comfortable. This chapter analyses noise mathematically and the effects of multiple sources are examined. Two noises of exactly the same level can have a combined noise level that is 3 dB higher than the individual values. The greater the difference between the two individual noise sources, the lower is the combined noise level. Different people react differently to the same type of noise. A noise level up to 90 dB does not have any appreciable effect. Exposure in excess of 115 dB is not permitted with unprotected ears as it runs the risk of hearing impairment. The average noise level of various equipment used inside the washery generally ranges from 85 to 110 dB.

With the advancement of science and technology at an unprecedented pace, the urban centers of today's world have evolved not just in size but also in terms of the living conditions provided by them. This has brought about an increasing new awareness about the noise pollution, which has become a part of our day-to-day lives. Studies have been conducted to trace the amount of damage caused by the noise from various natural as well as man-made sources, especially traffic. In fact, noise has come to be associated with the mental, physical, emotional and psychological well-being of an individual, be it human beings or even animals. In legal terms, noise can be considered as an assault on an individual. Apparently, this is a potential hazard to the provisions of sound living conditions and needs to be checked at planning, administrative and judicial level. This paper identifies the various legislative provisions available in India and other parts of the world to check this menace. Reference has also been made to the conclusions from the studies by researchers, legislative cases involving noise pollution and the statistical analysis of the current situation. Thus an attempt has been made to give an overview of the complete scenario of noise pollution-related laws and jurisdictions, to make this paper useful for researchers, planners, administrators and people concerned with the enactment and enforcement of law.

Noise as an Environmental Problem in India Noise in recent years has emerged as one of the important pollutants of environment. In fact, it needs some legislation for its control like the Air Pollution act and Water Pollution Act but no legislation for it has yet been enacted despite the fact problem of noise is, in no way, less delicate than the problem of air and water pollution. No doubt, there are some central and state enactments which directly or indirectly relate to the problem of noise; however, there is no specific legislation in India as in some other countries to meet the growing challenges of noise pollution on national level. Noise of dhol, dhapli, bigul and shankh has been in the root of our Indian Culture. There is hardly any religious ceremony or festival in India being performed without any noise. But due to the rapid growth of urbanization and industrialization, noise has become a serious challenge to the quality of life of the people in most of the industrialized countries. Noise has rather become a permanent feature in the normal life of the people. The noise carries its adverse effects on human health, animals and birds by way of causing various health hazards. Thus noise is poised to challenge to human survival. A new problem of noise pollution emerged in recent years in India is an outcome of the indiscriminate use of loudspeakers. Its indiscriminate use from religious places and in performance of religious ceremonies and discourses sometimes makes it so difficult for the people to enjoy their basic freedoms with all human dignity. No doubt in India, enactments for environmental protection exist, but the gravity of the problem of noise pollution has not yet been realized by the Government. However, noise has been included within Section 2 of the Air Pollution Act and further under section 6(b) of the Environment Protection Act enabling the Central Government to enact the rules for the control of noise pollution. In pursuance thereof the Government notified Ambient Air Quality Standards in respect of noise10. The Central Pollution Control Board has also approved Noise Standards for different sources of noise, which have not yet been notified by the Government.

Existing Legal Provisions for Controlling Noise Section 268 of the Indian Penal Code6 states that "A person is guilty of public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right." Section 290 says that "Wherever one commits a public nuisance in any case not otherwise punishable by this Code, shall be punished with fine which may extend to Rs 200/-. Under Section 133 of the Criminal Procedure Code, the Magistrate has the power to make conditional order requiring the person causing nuisance to remove such nuisance.

Major Noise Sources

1. Road Traffic Road traffic noise is one of the most widespread and growing environmental problems in urban areas. In 1991 it was estimated that in Sydney4 : a) 1.5 million residents were exposed to outdoor traffic noise levels defined by the OECD as undesirable (between 55 and 65 dB (A)), where sleep and amenity are affected. b) 350,000 of these residents were estimated to experience noise levels considered as unacceptable (greater than 65dB(A)), where behavior patterns are constrained and health effects are demonstrable (ABS 1997b). In 1994 the NSW Road Traffic Noise Taskforce reported that road traffic noise has become a major urban environmental problem because: a) Historically, land use planning has not been well integrated with transport planning, allowing residential developments and major transport corridors to occur in close proximity without appropriate buffer zones or treatment to buildings. b) There has been an increasing community reliance on road transportation, and a reluctance to implement or accept partial solutions involving greater use of public transport. c) Traffic on many existing roads through built-up areas has increased well beyond expectations prevailing during planning or construction of the roadways. d) Potential solutions, apart from new vehicle noise standards are complex, often costly, and require coordinated actions by a number of agencies and the community. e) While there is high community awareness of the problem, there is a general lack of understanding of its extent and possible solutions. Rule 21 of the Bihar and Orissa Motor Vehicles Rules, 193010 reads: "(i) The driver of a motor vehicle shall not sound the horn for any purpose other than that ensuring safety in traffic and shall not sound it continuously. (ii) No cut-out exhaust whistles, sirens, klaxons, electric horn and similar appliances of any description shall be used on any motor vehicle in such areas within a district as may be notified by the District Magistrate in this behalf. Rule 5.5 of Delhi Motor Vehicles Rules, 19406 reads: "No matter vehicles shall be fitted with any multitoned horn giving a succession of

different tones or with any other sound producing device giving an unduly harsh, shrill, loud or alarming noise.” Rule 5.6 says that “Every motor vehicle shall be fitted with a device (hereinafter referred as a silencer) which by means of an expansion chamber or otherwise reduces as far as reasonable and practicable the noise that would otherwise be made by an escape of exhaust gases from the engines. While Rule 5.9 states that: “Every motor vehicle shall be so constructed and maintained as not to cause undue noise when in motion. Identical provisions to the Delhi Motor Vehicles Rules, 1940 have been incorporated in the Punjab Motor Vehicles Rules, 1940.

2. Air Traffic In the metropolitan area it has been the cause of considerable community concern. The extent of aircraft noise impact depends on the types of aircraft flown, the number of flights and flight paths. Under Section 5 of the Aircrafts Act, 19341 it is expected that aerodromes be constructed far away from residential areas of a city in order to protect residence from the noise created by frequent take-off and landing. Moreover, under the rule-making powers confirmed by Section 8 (A) of the Aircrafts Act, 1934 and its supercession of the Indian Aircraft (Public Health) Rules, 1946, Central Government can make rules to control noise pollution for safeguarding health.

3.Rail Traffic There are two main sources of noise and vibration relating to the operation of the rail network: the operation of trains and the maintenance and construction of rail infrastructure. The level of noise associated with rail traffic is related to the type of engine or rolling stock used, the speed of the train and track type and condition. The population centers served by electric trains, which are generally quieter than diesel, do not face much problem. Areas affected by freight trains often experience higher noise levels than areas affected by passenger trains. The problem of noise is compounded by the requirements of railway operations (especially night operations) and factors such as stopping patterns and topography, which can lead to localized problems. Rail noise can be considerable, but generally affects a far smaller group of the population than road or aircraft noise as it is generally confined to residents living along rail lines in urban areas. While changes to locomotives and rolling stock mean that they have become quieter over the last few years, railway noise remains a problem because of longer, more frequent and faster trains and the build up of the urban environment.

Q. 10) The Salient features of the wild life Protection Act 1972.

Ans: The Indian Parliament enacted the Wildlife (Protection) Act in 1972, which provides for the safeguard and protection of the wildlife (flora and fauna) in the country. This is important legislation and forms an integral part of the environment and ecology sections of the UPSC syllabus.

Wildlife Protection Act, 1972

This Act provides for the protection of the country’s wild animals, birds, and plant species, in order to ensure environmental and ecological security. Among other things, the Act lays down restrictions on hunting many animal species. The Act was last amended in the year 2006. An Amendment bill was introduced in the Rajya Sabha in 2013 and referred to a Standing Committee, but it was withdrawn in 2015.

Constitutional Provisions for the Wildlife Act

Article 48A of the Constitution of India directs the State to protect and improve the environment and safeguard wildlife and forests. This article was added to the Constitution by the 42nd Amendment in 1976.

Article 51A imposes certain fundamental duties for the people of India. One of them is to protect and improve the natural environment including forests, lakes, rivers, and wildlife and to have compassion for living creatures.

History of wildlife protection legislation in India

- The first such law was passed by the British Indian Government in 1887 called the Wild Birds Protection Act, 1887. The law sought to prohibit the possession and sale of specified wild birds that were either killed or captured during a breeding session.
- A second law was enacted in 1912 called the Wild Birds and Animals Protection Act. This was amended in 1935 when the Wild Birds and Animals Protection (Amendment) Act 1935 was passed.
- During the British Raj, wildlife protection was not accorded a priority. It was only in 1960 that the issue of protection of wildlife and the prevention of certain species from becoming extinct came into the fore.

Need for the Wildlife Protection Act

Wildlife is a part of ‘forests’ and this was a state subject until the Parliament passed this law in 1972. Now it is Concurrent List. Reasons for a nationwide law in the domain of environment particularly wildlife include the following:

1. India is a treasure-trove of varied flora and fauna. Many species were seeing a rapid decline in numbers. For instance, it was mentioned by Edward Pritchard Gee (A naturalist), that at the turn of the 20th century, India was home to close to 40000 tigers. But, a census in 1972 showed this number drastically reduced to about 1827.
2. A drastic decrease in the flora and fauna can cause ecological imbalance, which affects many aspects of climate and the ecosystem.
3. The most recent Act passed during the British era in this regard was the Wild Birds and Animals Protection, 1935. This needed to be upgraded as the punishments awarded to poachers and traders of wildlife products were disproportionate to the huge financial benefits that accrue to them.
4. There were only five national parks in India prior to the enactment of this Act.

Salient Features of Wildlife Protection Act

This Act provides for the protection of a listed species of animals, birds, and plants, and also for the establishment of a network of ecologically-important protected areas in the country.

- The Act provides for the formation of wildlife advisory boards, wildlife wardens, specifies their powers and duties, etc.
- It helped India become a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

- CITES is a multilateral treaty with the objective of protecting endangered animals and plants.
- It is also known as the Washington Convention and was adopted as a result of a meeting of IUCN members.

For the first time, a comprehensive list of the endangered wildlife of the country was prepared.

The Act prohibited the hunting of endangered species.

Scheduled animals are prohibited from being traded as per the Act's provisions.

The Act provides for licenses for the sale, transfer, and possession of some wildlife species.

It provides for the establishment of wildlife sanctuaries, national parks, etc.

Its provisions paved the way for the formation of the Central Zoo Authority. This is the central body responsible for the oversight of zoos in India. It was established in 1992.

The Act created six schedules which gave varying degrees of protection to classes of flora and fauna.

- Schedule I and Schedule II (Part II) get absolute protection, and offences under these schedules attract the maximum penalties.
- The schedules also include species that may be hunted.

The National Board for Wildlife was constituted as a statutory organization under the provisions of this Act.

- This is an advisory board that offers advice to the central government on issues of wildlife conservation in India.
- It is also the apex body to review and approve all matters related to wildlife, projects of national parks, sanctuaries, etc.
- The chief function of the Board is to promote the conservation and development of wildlife and forests.
- It is chaired by the Prime Minister.

The Act also provided for the establishment of the National Tiger Conservation Authority.

- It is a statutory body of the Ministry of Environment, Forest and Climate Change with an overall supervisory and coordination part, performing capacities as given in the Act.
- Its mandate is to strengthen tiger conservation in India.
- It gives statutory authority to Project Tiger which was launched in 1973 and has put the endangered tiger on a guaranteed path of revival by protecting it from extinction.

Protected Areas under the Wildlife Protection Act

There are five types of protected areas as provided under the Act. They are described below.

1. Sanctuaries: "Sanctuary is a place of refuge where injured, abandoned, and abused wildlife is allowed to live in peace in their natural environment without any human intervention."

1. They are naturally-occurring areas where endangered species are protected from poaching, hunting, and predation.
2. Here, animals are not bred for commercial exploitation.

3. The species are protected from any sort of disturbance.
4. Animals are not allowed to be captured or killed inside the sanctuaries.
5. A wildlife sanctuary is declared by the State government by a Notification. Boundaries can be altered by a Resolution of the State Legislature.
6. Human activities such as timber harvesting, collecting minor forest products, and private ownership rights are permitted as long as they do not interfere with the animals' well-being. Limited human activity is permitted.
7. They are open to the general public. But people are not allowed unescorted. There are restrictions as to who can enter and/or reside within the limits of the sanctuary. Only public servants (and his/her family), persons who own immovable property inside, etc. are allowed. People using the highways which pass through sanctuaries are also allowed inside.
8. Boundaries of sanctuaries are not generally fixed and defined.
9. Biologists and researchers are permitted inside so that they can study the area and its inhabitants.
10. The Chief Wildlife Warden (who is the authority to control, manage and maintain all sanctuaries) may grant permission to persons for entry or residence in the sanctuary for the study of wildlife, scientific research, photography, the transaction of any lawful business with persons residing inside, and tourism.
11. Sanctuaries can be upgraded to the status of a 'National Park'.
12. Examples: Indian Wild Ass Sanctuary (Rann of Kutch, Gujarat); Vedanthangal Bird Sanctuary in Tamil Nadu (oldest bird sanctuary in India); Dandeli Wildlife Sanctuary (Karnataka).

2. National Parks: "National Parks are the areas that are set by the government to conserve the natural environment."

    1. A national park has more restrictions as compared to a wildlife sanctuary.
    2. National parks can be declared by the State government by Notification. No alteration of the boundaries of a national park shall be made except on a resolution passed by the State Legislature.
    3. The main objective of a national park is to protect the natural environment of the area and biodiversity conservation.
    4. The landscape, fauna, and flora are present in their natural state in national parks.
    5. Their boundaries are fixed and defined.
    6. Here, no human activity is allowed.
    7. Grazing of livestock and private tenurial rights are not permitted here.
    8. Species mentioned in the Schedules of the Wildlife Act are not allowed to be hunted or captured.
    9. No person shall destroy, remove, or exploit any wildlife from a National Park or destroy or damage the habitat of any wild animal or deprive any wild animal of its habitat within a national park.
    10. They cannot be downgraded to the status of a 'sanctuary'.

11. Examples: Bandipur National Park in Karnataka; Hemis National Park in Jammu & Kashmir; Kaziranga National Park in Assam. See more on List of National Parks in India.

3. Conservation Reserves: The State government may declare an area (particularly those adjacent to sanctuaries or parks) as conservation reserves after consulting with local communities.

4. Community Reserves: The State government may declare any private or community land as a community reserve after consultation with the local community or an individual who has volunteered to conserve the wildlife.

5. Tiger Reserves: These areas are reserved for the protection and conservation of tigers in India. They are declared on the recommendations of the National Tiger Conservation Authority.

The amended Wildlife Act doesn't allow any commercial exploitation of forest produce in both wildlife sanctuaries and national parks, and local communities are allowed to collect forest produce only for their bona fide requirements.

Q.11) What do you mean by Biodiversity. Explain its impact on Environmental pollution.

Ans: Biodiversity or biological diversity is used to define the variety of living beings on Earth. It is basically the degree of variation of life. Biodiversity contains all micro-organisms, plants, animals and even the ecosystems like forests, deserts, coral reefs etc.

Biodiversity is also the number or abundance of different species that live within a particular region. It is all about the natural area sustenance which is made up of the plants, animals and all other living beings. All the human cultures have their toots deeply embedded in our biological diversity in some or the other way.

Biodiversity also lays down the foundation for the vast array of ecosystem services that are critically important for their contribution to the well being of the humans. Biodiversity lays down the foundation for the ecosystem services to which the well being of the humans is linked. 'Biological diversity' or biodiversity is that part of nature which includes the differences in genes among the individuals of a species, the variety and richness of all the plants and animal species at different scales in space, locally, in a region, in the country and the world, and various types of ecosystems, both terrestrial and aquatic, within a defined area.

Biodiversity has three main important elements-

- Genetic diversity

- Eco system diversity

- Species diversity

- Genetic Diversity

- Each member of any animal or plant species differs widely from other individuals in its genetic makeup because of the large number of combinations possible in the genes that give every individual specific characteristic. Thus, for example, each human being is very different from all others. This genetic variability is essential for a healthy breeding population of a species. If the number of breeding individuals is reduced, the dissimilarity of genetic makeup is reduced and in-breeding occurs. Eventually this can lead to the extinction of the species. The diversity in wild species forms the 'gene pool' from which our crops and domestic animals have been developed over thousands of years.

- Species Diversity

- The number of species of plants and animals that are present in a region constitutes its species diversity. This diversity is seen both in natural ecosystems and in agricultural ecosystems. Some areas are richer in species than others. Natural undisturbed tropical forests have much greater species richness than plantations developed by the Forest Department for timber production. Thus the value of a natural forest, with all its species richness is much greater than a plantation. Modern intensive agricultural ecosystems have a relatively lower diversity of crops than traditional agro-pastoral farming systems where multiple crops were planted.

- Ecosystem Diversity

- There are a large variety of different ecosystems on earth, which have their own complement of distinctive inter linked species based on the differences in the habitat. Ecosystem diversity can be described for a specific geographical region, or a political entity such as a country, a State or a taluka. Distinctive ecosystems include landscapes such as forests, grasslands, deserts, mountains, etc., as well as aquatic ecosystems such as rivers, lakes, and the sea. Each region also has man-modified areas such as farmland or grazing pastures.

- An ecosystem is referred to as 'Natural' when it is relatively undisturbed by human activities or 'Modified' when it is changed to other types of uses, such as farmland or urban areas.

- Most species appear to have a life span extending over several million years. Their adaptability to gradual changes in their habitat, and interactions with newly formed species produce groups of inter linked organisms that continue to evolve together. Food chains, prey-predator relationships, parasitism (complete dependence on another species), commensalism (a partnership beneficial to both

IMPORTANCE OF MAINTAINING THE BIODIVERSITY

- Biodiversity helps in maintaining the balance of ecosystem on the Earth.

- It also helps in providing the biological resources like provision of medicine, food for the animals and human population, wood products, diversity of species, ecosystems, genes and etc.

- Biodiversity enriches the Earth for recreation and tourism along with being a major source for educational research and cultural value.

- Biodiversity plays a very important role in the discovery of drugs and medicines. It is a proven fact that the medicines from nature account for 80% usage in the world’s population.

- Biological resources provide various industrial materials like fiber, rubber, oil, water, paper, wood etc.

- The rich biodiversity becomes a sit for tourist attractions and enhances the recreational activities like fishing, trekking, bird watching and etc. It also becomes a muse for the artists and the musicians.

- If we as humans have a right to exist, then same goes with other species. We cannot voluntarily cause their extinction for our own purposes.

Biological diversity’s impact on Environmental pollution

Ecosystem conversion and ecosystem degradation contributes to habitat fragmentation. Habitat loss from exploitation of resources, agricultural conversion, and urbanization is the largest factor contributing to the loss of biodiversity. The consequent fragmentation of habitat results in small isolated patches of land that cannot maintain populations of species into the future. Tweedsmuir Provincial Park, at 974,046 hectares, is British Columbia’s largest provincial park and is big enough to maintain much of the composition, structure and function of biodiversity within the protected area. However, smaller provincial parks, such as Buccaneer Bay at less than one hectare in size, will not be able to maintain all of its original biodiversity in isolation. Scientists report that the effect of habitat fragmentation on biodiversity may not be fully realized for decades after habitat is degraded. Therefore, habitat connectivity must be considered in current management practices to prevent the devastating effects of fragmentation on biodiversity. Infestation by alien species, such as the Codling Moth, is also a major threat to BC ecosystems. The intentional and inadvertent introductions of a wide variety of species to ecosystems in which they do not belong have resulted in ecosystems that differ radically in structure and function from those originally present. Exotic species are typically introduced into ecosystems without their co-evolved predators and parasites, which enables an alien invader to out-compete native species with similar ecological requirements. In British Columbia, plants such as Knapweed, introduced to arid grasslands, and Purple Loosestrife, introduced to marsh and riparian areas, are rapidly becoming dominant plant species in their respective ecosystems. The interactions between native species are altered or destroyed by these exotic species, and can result in the loss of native biodiversity.

Atmospheric and hydrologic pollution have far-reaching negative effects on biodiversity. Pollution from burning fossil fuels such as oil, coal and gas can remain in the air as particle pollutants or fall to the ground as acid rain. Acid rain, which is primarily composed of sulfuric and nitric acid, causes acidification of lakes, streams and sensitive forest soils, and contributes to slower forest growth and tree damage at high elevations. In addition, chemical pollutants such as pesticides and herbicides leach into soils and watersheds. Some fish species, such as salmonids, require small freshwater streams to spawn. Polluted streams result in the abandonment of traditional spawning areas and ultimately in the loss of salmon populations. Species' sensitivity to pollution is variable. However, many species are vulnerable to the indirect effects of pollution through the concentration of toxic chemicals in top predators of food chains and disruption of predator-prey interactions. Carbon dioxide released from burning fossil fuels and biomass, deforestation, and agricultural practices contributes to greenhouse gases, which prevent heat from escaping the earth's surface. With the increase in temperature expected from increasing greenhouse gases, there will be higher levels of air pollution, greater variability in weather patterns, and changes in the distribution of vegetation in the landscape. Some species will not be able to adapt to these changes in the environment and will become extinct. However, it is expected that many plant and animal species will attempt to disperse to higher latitudes and altitudes as the temperature increases. Therefore, any barriers in the landscape, such as highways and urban areas that prevent movement to more hospitable environments, will result in loss of biodiversity. Such threats to biodiversity may cause the extinction of many species. Maintaining the connectivity of the landscape could offset their impacts on biodiversity. The corridor concept proposes that refuges connected by corridors will have higher immigration rates than isolated patches of natural habitat. This can offset extinction by promoting gene flow and preventing inbreeding. Corridors composed of naturally occurring or restored strips of land that connect large habitat patches may facilitate the movement of species between patches, and decrease the effects of threats to biodiversity. Habitat patches connected by corridors must always be large enough to maintain populations of species, especially for large-bodied vertebrates.

The effectiveness of wildlife corridors depends on many corridor design parameters, which include habitat type and structural stage, length and width, and level of human activity in and around the corridor. Individual species require different scales of connectivity. Some species are able to disperse in very narrow strips of natural vegetation, such as hedgerows, whereas other species require large habitat patches close together with very short migration distances through unsuitable habitat. Solely retaining or enhancing narrow strips of vegetation between habitat refuges cannot maintain biodiversity; the habitat values of the overall landscape must be retained.

Q.12) Elucidate Indian Forest Act.

Ans: Forests are one of the essential natural resources available in the country and cover around 1/3rd of the earth's total area. The word forest is derived from a Latin word "Foris" meaning outside. The forests act as the guardians and protectors of the wildlife of the country. Its uses are many in terms of fertility, shelter to animals as well as tribal population to mention a few which in turn helps to maintain the ecological balance all over the country. Forests are a means of generating revenue for the state by supplying various raw materials in its most natural form to the industries globally. They are a reason behind climate change and in controlling the quality of air and water.

The forests are in use in the hands of the majority population due to which the resources available are being consumed at an alarming rate resulting in depletion. The users of the forests have recklessly utilized the forests for cultivation and destroyed them in the name of agriculture and other personal consumption of wood, timber, fuel and fodder. The need for a legislation protecting and regulating the forests was required, which was met by the Indian Forest Act, 1927 imposing Governmental control over forests by classifying them into reserved, protected and village forests. The Act of 1927 is a comprehensive legislation incorporating all the pre-existing laws enacted to protect the forests as well as the rights of the people residing in the forests. The first legislation was enacted in 1865 during the British rule which was an attempt to protect the forests the Act had its fallouts with relation to the rights of the people, that were not protected. The amendment of 1878 was aimed at improving the deficiencies of the Indian Forest Act of 1865.

The Indian Forest Act, 1927

In 1927, a revised legislation of the Indian Forest Act was enacted based on previous Indian Forest Acts implemented under the British. Just like the preamble to the Constitution that lays down the objectives, every legislation has its preamble wherein the objectives and guidelines of the particular Act are listed. The preamble of the Indian Forest Act seeks:

- to consolidate the law relating to forests,
- regulation of and the transit of forest produce, and
- to levy duty on timber and other forest produce.

It also consists of the procedure followed in cases of declaring the area to be a reserved, protected or a village forest. The Act is divided into 13 chapters with a total of 86 sections ranging from the definition of various forests to the penalties that are to be levied on the violation of the provisions of the Act. The term ‘forest’ has a wider ambit when it comes to its definition as it includes private lands, lands for pasture, cultivable lands etc. and so the Supreme Court is yet to assign a particular interpretation and thus the Act is silent on the definition of a forest or a forest land.

The section 2 of the Act that is the interpretation clause defines various terms that are essential in the domain of forests; starting from cattle inclusive of all the animals, the forest officer who is made in-charge by the State Government, the forest produce which includes timber, charcoal, wood-oil etc. It also has a separate interpretation of the river including any stream, canal or other channels. Further, the Act is classified into 3 types of forests that are; reserved forests, protected forests and the village forests.

Reserved Forests

The reserved forests are dealt with in Chapter II of the Act ranging from section 3 to 27. In simple words, any forest land or waste land to which the government has the ownership is a reserved forest. These forests are restricted as the Government has proprietary rights over the land. The use of the reserved forests is prohibited to the local people unless they have a permission by the government. The area of land is declared to be a reserved forest when the Government issues a preliminary notification under section 4 of the Act declaring that such a land is to be constituted as a reserved forest and the Forest Settlement Officer settles all the rights either by admitting or rejecting them.

Section 26 of the IFA, 1927 deals with the prohibition of a number of activities including grazing, tree felling, burning, quarrying, hunting etc. in the forest. The penalty for the violation of the provisions of section 26 is imprisonment for a term which may extend to two years or with fine which may extend to Rs. 20,000 but which shall not be less than Rs. 5000.

Village forests

Following the order of the sections under the Act, the village forests are dealt with next in Chapter III of the Act under section 28. When the Government assigns any reserved forest or any other land to the village community for their use that piece of land is classified under village forest lands. As according to the Act, the State Government makes rules for regulating the management of these forests.

The term village forest and forest village are interchangeably used in certain cases, but are eventually different in their meaning. While village forest is a legal category under the Indian Forest Act, forest village is merely an administrative category. Although the latter is recognised by the Forest Department, the revenue benefits cannot accrue to such villages as they are not technically under the revenue departments. Generally, the lands given to village forests are constituted into Village Grazing Reserve (VGR).

Protected forests

The state government is empowered to constitute any land other than reserved forests as protected forests over which the Government has proprietary rights. The provisions for the protected forests are dealt in Chapter IV under section 29 of the Act. In the case of these forests the Government retains the power to issue rules regarding the use of forests and if in cases where there are no rules, the practices are allowed. Along-with the rights, the Government also has the power to reserve the specific tree species in the protected forests. The sole reason behind this being that those particular trees have the revenue raising potential and are thus required to be protected for their benefits in the economy.

Chapter V of the Act deals with another type of forests named Non-government forests or rather Private forests. Considering the other forests to be owned and regulated by the government, these forest lands are not in control of the government. Though, the State Government can by notification prohibit and regulate the clearing of land for various purposes which comes under the Government's power only in special circumstances like to preserve public health and wellness.

One of the objectives of the Act regarding the levying of duty on timber and other forest produce is dealt with in chapter VI which extends to the produce that takes place in the territories and is under Government control. The Act covers the rights of the Government over the forest produce that is floating or sn transit in rivers or at the banks of rivers.

Procedure for Settlement of Rights

The Act was mainly incorporated to differentiate the types of forests while protecting their use as well as regulating the forest produce. The classification of forests involves the rights of the Government and determines how a forest or a waste land becomes a reserved or protected forest.

The procedure requires the Forest Settlement Officer to consider the claims made by the local inhabitants regarding the usage of the land, later make decisions based on his discretion either to accept or relocate or to discontinue the practice. The Government is first required to notify as per section 4 of the Act that the particular piece of land is going to be labelled as a reserved or protected forest.

As per section 6 of the Act, the FSO may call for an examination of any person who, he may think, has the knowledge of the facts, including the evidence of any person likely to be acquainted with the same. No new rights in the notified land may arise after such a notification has been issued, and those claiming any pre-existing right have a period of at least three months to appear and assert such a right, and to make a case for compensation.

However, there still exists an assertion period in extraordinary cases until the final reservation order gets published.

The Act is inclusive of the provisions that are necessary considering the protection of the forests and their regulation. Further, the Act deals with the seizure of property by the Forest or Police officer where if he has a reason to believe that there is any commission of offence with respect to the forest produce. The phrase *'reason to believe'* is subject to the suspicion and material evidence in custody of the offender. The officers are required to put a mark on the property being seized and have to prepare a report which is then given to the Magistrate having jurisdiction of the matter.

The Act ensures that powers are granted to the Forest officers by the State Government with relation to entering upon the lands to conduct a survey, issuing search warrants, conducting inquiry and recording evidence for the same. These evidence are then admissible in trials before a Magistrate for the offences committed.

Drawbacks of the Act

The Act lacks with respect to depicting the forests as a means of ecological catchment and the importance of forests in an individual’s life. The loopholes in the legislation are in consideration with the economic value that is being given utmost importance and the essence of conservation and biodiversity is not elaborated in the Act. This enactment throws light over the vicious acts of the Government to gain power over the forest produce rather than its conservation and protection of vegetation.

The Act mainly focuses on the forest land, its produce and the officers whereas there are no detailed provisions for the fauna under the Act. The reason behind this is that the Act was incorporated during the British times, keeping in mind their interests of hunting and so it did not constitute separate laws for the wildlife which forms the part of the forest. However, in 1972 a separate legislation altogether i.e. the Wildlife Protection Act was enacted. This formed one of the major lacunae of the Indian Forest Act of 1927. The needs for timber were also catered during this course as this Act fostered the British demands of timber from the Indian forest lands. The Act though wanted to protect the rights of the forest dwellers, it failed to meet the expectations of the local inhabitants as they were denied the occupancy and property rights even after residing in the forests for years.

The Indian Forest Act, 1927 is a revised comprehensive legislation enacted with the intention to deal with the lacunae in the previous acts and formulate the laws of the forest. Though the Act has attempted to classify the forests and protect their extensive use it has eventually failed by providing sole decision-making authority in the hands of the Government, making the legislation arbitrary and unreasonable in its use. The central idea of the Act claims to be different from what was eventually practiced in matters of separate lands for separate uses at the peril of the Forest officers’ discretion. While dealing with the intricacies of the Act the laws for wildlife and river water conservation were lacking, considering the importance of flora and fauna being an essential part of the forests there were no provisions dealing in detail for the same.

Although the Act aimed towards the forest conservation and its forest produce duties, it failed miserably in meeting its objective. The essence of the Act was lost when the Government regained the control of these forests so that the revenue can be generated from the forest produce. Eventually, the Act could not serve its purpose, that is to avoid the exploitation as earlier the people were exploiting the forests and now it was the government in power to regulate and prohibit the usage of the lands.

The Forest Act, requires amends in matters where the focus should be shifted towards conservation and enrichment of sustainable use of the forest resources to safeguard the ecological stability as was proposed in the amendment bill of 2019 for bringing changes in the Act of 1927. The forest dwellers in this matter deserve their rights to be fulfilled by the government in terms of their use of these lands as they have been the lawful inhabitants of the land which are being restricted for their rights over the land.

Q.13) Explain the aim and objectives of the Forest Rights Act 2006.
Ans: India is one of the seven mega biodiversity countries in the world. There are various types of vegetation is found in India.

According to The Forest report 2020, which is released by the Ministry of Forest, Environment and Climate Change, the total forest and tree cover is 24.56% of the total land area of the country.

The total forest cover is 7,12,249 sq. Km. which is nearly 21.67% of the total land of the country. The top five states which show an increase in forest cover are Karnataka, Andhra Pradesh, Jammu and Kashmir, Himachal Pradesh.

Background of the Forest Rights Act 2006

In the North – East region, all states show a reduction in forest cover except Assam and Tripura. Indian forest also provides a home to thousands of people, especially the tribal people. They are about nearly 100 million people belonging to the tribal community.

Nowadays, the society which becomes technology-driven and people interest and needs increasing day by day, the forest cover reduction occur rapidly. There is a reduction in forest cover since past many decades, and people use this land for construction of houses and industry.

To prevent this loss and for a sustainable life of Tribal people, the government of India implemented various laws and acts. Out of these right and acts, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights)Act, 2006 is a landmark act in legislation passed by the Indian government.

Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights)Act, 2006

It is the act passed by the Indian government in 2006. The act was passed on 18 December 2006. The other names of this act are:

Forest Right Act

The Tribal Rights Act

The Tribal Bill

The Tribal Land Act

As its name defined itself, it is concerned with the rights of tribal people or with the forest-dwelling communities to land and other resources. This prohibited the continuance of colonial forest acts and laws in India. The act was enacted on 29 December 2006 and commencement of the act was done on 31 December 2007.

The act defines the community forest resources as the customary common forest land situated in customary village boundaries and also in case of pastoral communities, seasonal use of landscape. Forest Dwelling persons Schedule Tribes as the person or group of people live and depend on forest land to live his life.

The Gram Sabha shall be the authority to initiate the process for determining the nature and extend of individual or community rights.

Some people see this act brings conservation more efficient, transparent and beneficial for tribal people.

Objectives of the Forest Rights Act, 2006

The objective of the Forest Rights Act, 2006 are:

- It is enacted to recognize the forest rights of the Scheduled tribes and traditional forest dwellers.
- It also aims to protect the culture of the schedule tribes living in these areas.
- The act also provides the right to occupation to them.
- This act also highlighted the conservation and management of natural resources in India.

Provisions of the Forest Rights Act,2006

The act has the following provisions and included in section 3(1) of the act:

- Right to hold and live
- Community rights
- Right of ownership, access to collect use and dispose of minor forest produce
- Other community rights
- Rights for the conversion of leases
- Right of settlement
- Right to protect, regenerate or conserve or manage any forest resources
- Right to access to biodiversity

Rights to hold and live: Forest dwellers, Scheduled Tribes and other inhabitants have the right to hold and live in forest land under single and joint occupation for self – cultivation of an individual or a community.

Community rights: All those rights which were from the time of princely states by whatever name they are known, such as Zamindari.

Right of ownership, access to collect, use and dispose of minor forest produce: The act provides right to ownership, access to collect, use and dispose of minor forest produce which is collected from within or outside the forest done traditionally by Schedule Tribes or forest dwellers living there.

Rights for the conversion of lease, pattas or grants: This is issued by any local authority or state government on forest lands.

It also provides rights for disputes lands under nay nomenclature in any state where it is said or assumed to be disputed.

Right of settlement: Revenue village can be settled by conversion of old forest village, old habitation, non-surveyed villages and miscellaneous villages in forest whether they are recorded and notified or not.

This act also provides provision for and conversing the community forest resources by sustainable use of them and have the right to protect, regenerate or converse and manage any forest resource.

All rights for biodiversity and community to access intellectual property and traditional knowledge relating to cultural and biodiversity.

Right to *in situ* rehabilitation to the Scheduled Tribes or other forest dwellers who are illegally displaced from forest land without getting their legal entitlement to rehabilitation before 13, December 2005.

The rights which are recognized under any state law or laws of any autonomous district council which are accepted as a right of tribal under any traditional or customary law of the concerned tribes of any state.

Primitive tribal groups and pre – agriculture communities have rights for habitation and community tenure of habitat.

This act also provides other rights to forest dwellers or schedule tribes apart from above mention rights but do not include the right of hunting or extracting of any species of wild animals.

Diversion of forest land can be made by the central government for the following facilities except for anything in forest Act,1980 which involves felling of trees not exceeding 75 trees per hectare namely:

- Schools
- Dispensaries or hospitals
- Anganwadis
- Fair price shops
- Electric and telecommunication lines
- Community centres and roads etc.

The Ministry of Tribal Affairs or any officer or any authority authorized by the central government on the behalf shall be the nodal agency for the implementation of the provisions of the act.

Importance of Forest Right Act, 2006

To protect the interest and culture of scheduled tribes and forest dwellers, the Forest Right Act came into force. The importance of this act is as follows:

This is the first time in which the community rights have been recognized.

Individual rights have also emphasis along with community rights.

The revenue village concept has been introduced in the act as it has the provision of conversion of all forest villages, unsurveyed villages and old habitats etc. into forests.

The resources of the forests are managed and supervised in a way to protect the traditional linkages of the tribal people living there. The act ensures protection of the culture of forest dwellers and sustainable use of the resources.

The rights of community which are displaced due to some reason get rights also after the commencement of this act.

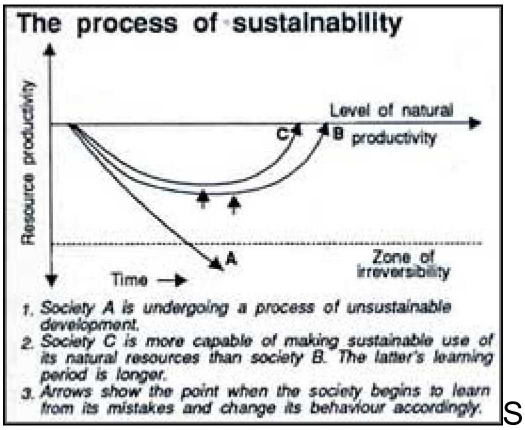
This act also provides intellectual property rights and traditional knowledge of the diversity and culture of the forests.

It is the act which covers the rights of marginal and tribal developmental activities.

The acts provide various rights to the tribal and forest dwellers but also protect forest resources as it prohibits the hunting or extracting a part of a species of wild animals.

Q.14) What is Sustainable Development?

Sustainable development, the buzzword in environmental circles, is largely misunderstood. It can only come about in a society which can learn from its mistakes in handling natural resources. This new column gives our readers the background of contemporary issues.



The process of sustainability

1. *Society A is undergoing a process of unsustainable development.*
2. *Society C is more capable of making sustainable use of its natural resources than society B. The latter's learning period is longer.*
3. *Arrows show the point when the society begins to learn from its mistakes and change its behaviour accordingly.*

SUSTAINABLE development has become the new catch phrase. Every international agency -- from the World Bank to UNICEF -- and almost every country is talking about it. But what does this mean? For environmentalists, sustainable development denotes a radical change from the past.

But as a Western joke now goes, sustainable development for multinational companies, many of which have also embraced the concept, means simply "sustained growth" or "sustained profits". Every agency now has its own definition of sustainable development.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This is a definition offered by the famous World Commission on Environment and Development in its report Our Common Future. Economists have also provided a definition of sustainable development as being an economic process in which the quantity and quality of our stocks of natural resources (like forests) and the integrity of biogeochemical cycles (like climate) are sustained and passed on to the future generations unimpaired. In other words, there is no depreciation in the world's "natural capital", to borrow a concept from financial accounting.

But what is the operational substance behind such definitions? Who is going to ensure the rights of future generations when, given the highly divided world we live in, a large proportion of even the present generation cannot meet all its needs. Given such a social and political context, the above definitions also fail to say whose future generations' needs are being sought to be protected and preserved. Are we talking only of the future generations of the rich or also of the poor? These definitions are all, at best, rhetorical and woolly.

Eminent Indian economist, Sukhamoy Chakravorty, in a lecture that he delivered to the Centre for Science and Environment a few weeks before his demise, had pointed out that the success of the phrase "sustainable development" lies in the fact that it says nothing precise and, therefore, means anything to anybody. For a logging company it can mean sustained projects; for an environmental economist it can mean sustained stocks of natural forests; for a social ecologist it can mean sustained use of the forest; and, for an environmentalist it can mean a clean heritage for our children. But surely confusion cannot be more productive than clarity.

More than these pious definitions, it is important to understand the political content of sustainable development. Sustainability can never be absolute. A society which learns faster from its mistakes and rectifies its behaviour will invariably be more sustainable than another society which takes a longer time. And a society which fails to incorporate the lessons of its mistakes into its behaviour patterns even after the point of irreversibility has been reached, is obviously a society which is pursuing a totally unsustainable process of development. Learning from one's mistakes is crucial to the process of sustainable development because no society -- today, tomorrow or ever in the future -- can claim to be so knowledgeable that it will always manage and use its natural resources in a perfectly ecologically sound manner. That will always be a near impossibility. Changing social, political, cultural, technological and ecological conditions will exert new pressures on the natural resource base and the possibility of its misuse or overuse will always remain. It can, therefore, be argued that sustainable development will be the outcome of a political order in which a society is so structured that it will learn fast from its mistakes in the use of its natural resources and rapidly rectify its human-nature relationships in accordance with the knowledge it has gained.

The important question, therefore, is: which political order will lead to conditions which encourage a society to learn fast from its mistakes in the use of its natural resources? It is obvious that such a society will be one in which decision- making is largely the prerogative of those who will also suffer the consequences of those decisions. If decisions are taken by a distant national bureaucracy or a transnational corporation to use a particular resource, and a local community living next to that resource is suffering in the process, it is unlikely that the decision-makers will change their decisions fast. But if the resource is being overused or misused by a local community which is dependent on it for its survival, and cannot easily relocate itself to another environment (in other words, it is a settled community rather than a frontier community), the declining productivity of the resource would sooner or later force the local community to change its ways.

Sustainability, therefore, arises not out of mushy headed concepts like care for future generations but out of hard political issues like, one, patterns of resource control, and, two, levels of democracy within the decision-making group. Greater the participation, openness and democracy within the members of the decision-making group, greater will be the chances of those who are suffering within the decision-making group -- whether the decision is taken by a community or a nation as whole -- to get a fair hearing and decisions changed accordingly.

Sustainability thus demands the creation of a political order in which, firstly, control of natural resources rests to the maximum extent possible with local communities who are dependent on those resources; and, secondly, decision-making within the community is as participatory, open and democratic as possible. The more this happens, the more we will move towards sustainable development.

The bedrock of sustainable development is composed of freedom and democracy -- a system of governance which gives freedom to a community or a nation, within an universally accepted social framework that prescribes penalties for harming another community or nation, to control the use and management of its natural resources so that it can determine its own way of economic and social development. Each society will experiment and learn from its own mistakes. Sustainable development cannot be thrust upon by an external agent -- whether it is the World Bank, the United Nations or the forestry department of a government -- simply because it believes, at any point in time, that it has learnt all the lessons there are to learn. That will surely be a process towards unsustainable development.

Q. 15) Precautionary Principles and Polluter pay principle.

Ans: Principles of Environmental Law

The design and application of modern environmental law have been shaped by a set of principles and concepts outlined in publications such as Our Common Future (1987), published by the World Commission on Environment and Development, and the Earth Summit's Rio Declaration (1992).

The precautionary principle

As discussed above, environmental law regularly operates in areas complicated by high levels of scientific uncertainty. In the case of many activities that entail some change to the environment, it is impossible to determine precisely what effects the activity will have on the quality of the environment or on human health. It is generally impossible to know, for example, whether a certain level of air pollution will result in an increase in mortality from respiratory disease, whether a certain level of water pollution will reduce a healthy fish population, or whether oil development in an environmentally sensitive area will significantly disturb the native wildlife. The precautionary principle requires that, if there is a strong suspicion that a certain activity may have environmentally harmful consequences, it is better to control that activity now rather than to wait for incontrovertible scientific evidence. This principle is expressed in the Rio Declaration, which stipulates that, where there are "threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." In the United States the precautionary principle was incorporated into the design of habitat-conservation plans required under the aegis of the Endangered Species Act. In 1989 the EC invoked the precautionary principle when it banned the importation of U.S. hormone-fed beef, and in 2000 the organization adopted the principle as a "full-fledged and general principle of international law." In 1999 Australia and New Zealand invoked the precautionary principle in their suit against Japan for its alleged overfishing of southern bluefin tuna.

The prevention principle

Although much environmental legislation is drafted in response to catastrophes, preventing environmental harm is cheaper, easier, and less environmentally dangerous than reacting to environmental harm that already has taken place. The prevention principle is the fundamental notion behind laws regulating the generation, transportation, treatment, storage, and disposal of hazardous waste and laws regulating the use of pesticides. The principle was the foundation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989), which sought to minimize the production of hazardous waste and to combat illegal dumping. The prevention principle also was an important element of the EC's Third Environmental Action Programme, which was adopted in 1983.

The "polluter pays" principle

Since the early 1970s the “polluter pays” principle has been a dominant concept in environmental law. Many economists claim that much environmental harm is caused by producers who “externalize” the costs of their activities. For example, factories that emit unfiltered exhaust into the atmosphere or discharge untreated chemicals into a river pay little to dispose of their waste. Instead, the cost of waste disposal in the form of pollution is borne by the entire community. Similarly, the driver of an automobile bears the costs of fuel and maintenance but externalizes the costs associated with the gases emitted from the tailpipe. Accordingly, the purpose of many environmental regulations is to force polluters to bear the real costs of their pollution, though such costs often are difficult to calculate precisely. In theory, such measures encourage producers of pollution to make cleaner products or to use cleaner technologies. The “polluter pays” principle underlies U.S. laws requiring the cleanup of releases of hazardous substances, including oil. One such law, the Oil Pollution Act (1990), was passed in reaction to the spillage of some 11 million gallons (41 million litres) of oil into Prince William Sound in Alaska in 1989. The “polluter pays” principle also guides the policies of the EU and other governments throughout the world. A 1991 ordinance in Germany, for example, held businesses responsible for the costs of recycling or disposing of their products’ packaging, up to the end of the product’s life cycle; however, the German Federal Constitutional Court struck down the regulation as unconstitutional. Such policies also have been adopted at the regional or state level; in 1996 the U.S. state of Florida, in order to protect its environmentally sensitive Everglades region, incorporated a limited “polluter pays” provision into its constitution.

The integration principle

Environmental protection requires that due consideration be given to the potential consequences of environmentally fateful decisions. Various jurisdictions (e.g., the United States and the EU) and business organizations (e.g., the U.S. Chamber of Commerce) have integrated environmental considerations into their decision-making processes through environmental-impact-assessment mandates and other provisions.

The public participation principle

Decisions about environmental protection often formally integrate the views of the public. Generally, government decisions to set environmental standards for specific types of pollution, to permit significant environmentally damaging activities, or to preserve significant resources are made only after the impending decision has been formally and publicly announced and the public has been given the opportunity to influence the decision through written comments or hearings. In many countries citizens may challenge in court or before administrative bodies government decisions affecting the environment. These citizen lawsuits have become an important component of environmental decision making at both the national and the international level.

Public participation in environmental decision making has been facilitated in Europe and North America by laws that mandate extensive public access to government information on the environment. Similar measures at the international level include the Rio Declaration and the 1998 Århus Convention, which committed the 40

European signatory states to increase the environmental information available to the public and to enhance the public's ability to participate in government decisions that affect the environment. During the 1990s the Internet became a primary vehicle for disseminating environmental information to the public.

Sustainable development

Sustainable development is an approach to economic planning that attempts to foster economic growth while preserving the quality of the environment for future generations. Despite its enormous popularity in the last two decades of the 20th century, the concept of sustainable development proved difficult to apply in many cases, primarily because the results of long-term sustainability analyses depend on the particular resources focused upon. For example, a forest that will provide a sustained yield of timber in perpetuity may not support native bird populations, and a mineral deposit that will eventually be exhausted may nevertheless support more or less sustainable communities. Sustainability was the focus of the 1992 Earth Summit and later was central to a multitude of environmental studies.

One of the most important areas of the law of sustainable development is ecotourism. Although tourism poses the threat of environmental harm from pollution and the overuse of natural resources, it also can create economic incentives for the preservation of the environment in developing countries and increase awareness of unique and fragile ecosystems throughout the world. In 1995 the World Conference on Sustainable Tourism, held on the island of Lanzarote in the Canary Islands, adopted a charter that encouraged the development of laws that would promote the dual goals of economic development through tourism and protection of the environment. Two years later, in the Malé Declaration on Sustainable Tourism, 27 Asian-Pacific countries pledged themselves to a set of principles that included fostering awareness of environmental ethics in tourism, reducing waste, promoting natural and cultural diversity, and supporting local economies and local community involvement. Highlighting the growing importance of sustainable tourism, the World Tourism Organization declared 2002 the International Year of Ecotourism.

Current Trends and Prospects: Although numerous international environmental treaties have been concluded, effective agreements remain difficult to achieve for a variety of reasons. Because environmental problems ignore political boundaries, they can be adequately addressed only with the cooperation of numerous governments, among which there may be serious disagreements on important points of environmental policy. Furthermore, because the measures necessary to address environmental problems typically result in social and economic hardships in the countries that adopt them, many countries, particularly in the developing world, have been reluctant to enter into environmental treaties. Since the 1970s a growing number of environmental treaties have incorporated provisions designed to encourage their adoption by developing countries. Such measures include financial cooperation, technology transfer, and differential implementation schedules and obligations.

The greatest challenge to the effectiveness of environmental treaties is compliance. Although treaties can attempt to enforce compliance through mechanisms such as sanctions, such measures usually are of limited usefulness, in part because countries in compliance with a treaty may be unwilling or unable to impose the sanctions called for by the treaty. In general, the threat of sanctions is less important to most countries than the possibility that by violating their international obligations they risk losing their good standing in the international community. Enforcement mechanisms other than sanctions have been difficult to establish, usually because they would require countries to cede significant aspects of their national sovereignty to foreign or international organizations. In most agreements, therefore, enforcement is treated as a domestic issue, an approach that effectively allows each country to define compliance in whatever way best serves its national interest. Despite this difficulty, international environmental treaties and agreements are likely to grow in importance as international environmental problems become more acute.

Many areas of international environmental law remain underdeveloped. Although international agreements have helped to make the laws and regulations applicable to some types of environmentally harmful activity more or less consistent in different countries, those applicable to other such activities can differ in dramatic ways. Because in most cases the damage caused by environmentally harmful activities cannot be contained within national boundaries, the lack of consistency in the law has led to situations in which activities that are legal in some countries result in illegal or otherwise unacceptable levels of environmental damage in neighbouring countries.

This problem became particularly acute with the adoption of free trade agreements beginning in the early 1990s. The North American Free Trade Agreement (NAFTA), for example, resulted in the creation of large numbers of maquiladoras—factories jointly owned by U.S. and Mexican corporations and operated in Mexico—inside a 60-mile- (100-km) wide free trade zone along the U.S.-Mexican border. Because Mexico's government lacked both the resources and the political will to enforce the country's environmental laws, the maquiladoras were able to pollute surrounding areas with relative impunity, often dumping hazardous wastes on the ground or directly into waterways, where they were carried into U.S. territory. Prior to NAFTA's adoption in 1992, the prospect of problems such as these led negotiators to append a so-called "side agreement" to the treaty, which pledged environmental cooperation between the signatory states. Meanwhile, in Europe concerns about the apparent connection between free trade agreements and environmental degradation fueled opposition to the Maastricht Treaty, which created the EU and expanded its jurisdiction.

Q.16) International efforts on climate change.

Ans: Committed to the Paris Agreement

Australia is party to the Paris Agreement. The Paris Agreement came into force in 2016. It was a major step forward in international efforts to address climate change. Other international treaties are the:

- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol.

The Paris Agreement aims to strengthen the global response to the threat of climate change by:

- holding the increase in the global average temperature to well below 2°C above pre-industrial levels
- pursuing efforts to limit temperature increase to 1.5°C.

Nationally Determined Contributions

Under the Paris Agreement, Australia must submit emissions reduction commitments known as Nationally Determined Contributions (NDCs). These include our national target.

Australia's first NDC is on the UNFCCC registry:

- 2015 NDC: committed to reduce emissions by 26 to 28% below 2005 levels by 2030.
- 2020 NDC update: affirmed the 2030 target, outlined Australia's practical, technology-led approach to emission reductions, include new actions and measures since 2015.
- 2021 NDC update: **committed to net zero emissions by 2050**, inscribed low emissions technology stretch goals, affirmed the 2030 target, and reported 2021 Projections results showing Australia is on track to exceed this target by up to 9 percentage points.

DFAT works with the Department of Industry, Science and Energy Resources to negotiate and meet Australia's emissions reduction obligations under the Paris Agreement. Australia will submit its next NDC, including our post–2030 target, to the UNFCCC in 2025.

Adaptation planning and implementation

Australia remains committed to taking action on implementing the **Global Goal on Adaptation** under the Paris Agreement.

The National Climate Resilience and Adaptation Strategy sets out what the Australian Government will do to support efforts across all levels of government, businesses and the community, to better anticipate, manage and adapt to the impacts of climate change.

Australia's first Adaptation Communication has been submitted to the UNFCCC ahead of COP26, showcasing Australia's practical climate adaptation action at home and in the region.

In 2021, Australia joined the Adaptation Action Coalition and the Coalition for Climate Resilient Investment to encourage greater action and ambition on climate change adaptation globally.

DFAT works with the Department of Agriculture, Water and Environment to meet Australia's adaptation commitments under the Paris Agreement.

Climate finance

Australia is committed to doing its part to meet the **UNFCCC's climate finance goals**. We are extending our commitment to build climate change resilience, mitigation and adaptation with a **$2 billion commitment over 2020-25** to be implemented through Australia's development program.

Historically, **about 70% of Australia's bilateral and regional climate finance is directed towards adaptation and resilience programming** in our region, prioritising the most vulnerable to climate change, especially Small Islands Developing States and Least Developed Countries.

Australia has been providing climate finance for more than 25 years and will continue its work with other developed countries and the OECD to track progress towards the USD100 billion per annum goal. Australia will also continue to support UNFCCC climate finance work, including through our representation on the Standing Committee on Finance.

United Nations Framework Convention on Climate Change (UNFCCC)

The 1992 UNFCCC is the primary framework for international climate change cooperation. Its overarching objective is to stabilise greenhouse gas concentrations at a level that would prevent dangerous human induced interference with the climate system. The Convention is a framework document augmented and updated by subsequent agreements, including the 1997 Kyoto Protocol and the 2015 Paris Agreement.

Australia is the chair of the Umbrella Group, an influential negotiating group that includes the United States, Japan, New Zealand, Canada, Norway and others.

Australia values transparency and submits regular national reports to the UNFCCC in line with its reporting requirements. For more on our reporting progress to the UNFCCC visit the Department of Industry, Science,Energy and Resources.

Bilateral initiatives

Australia holds regular climate change discussions with other countries at ministerial and senior officials' level, to share information, develop best practice and build joint efforts.

Australia is collaborating with partners, concluding agreements with Germany, Indonesia, Japan, Republic of Korea, Singapore, UK and Vietnam.

This engagement is led by the Australian Department of Industry, Science, Energy and Resources and the Office of the Special Adviser to the Australian Government on Low Emissions Technology, Dr Alan Finkel.

Action on Biodiversity

Climate change and biodiversity loss are inextricably linked. Australia is actively participating in the Convention on Biological Diversity **Post-2020 Global Biodiversity Framework** negotiations. The Framework is due to be agreed at the next Convention on Biological Diversity Conference of Parties (COP15), commencing in October 2021 and concluding in 2022.

The Convention on Biological Diversity guides international action on a broad range of biodiversity issues and provides a guiding framework which informs domestic biodiversity conservation priorities. The protection of biodiversity is critical as Australia is one of 17 countries in the world described as ‘mega diverse'. This group of countries cover less than 10% of the world's area but support more than 70% of biodiversity, most of which is endemic.

Australia is a member of the High Ambition Coalition for Nature and People, a global pact to protect 30% of the world's land areas and of sea areas, to halt the loss of species and ecosystems.

Action on oceans and their ecosystems

Australia is committed to actions to maintain the health of the world's oceans. In 2021 Australia joined the Global Ocean Alliance, which commits to protecting 30% of our oceans by 2030, including from the impacts of climate change. The Prime Minister is a member of the High Level Panel for a Sustainable Ocean Economy (the only ocean policy body comprised of serving world leaders), which released its Call to Ocean-Based Climate Action in 2019 outlining how the ocean and ocean industries can help to mitigate and adapt to climate change

Australia launched the International Partnership for Blue Carbon at the 2015 Paris Climate Conference and it has now grown to almost 50 members. The Partnership aims to build awareness, share knowledge and accelerate practical action to protect and restore mangroves, tidal marshes and seagrasses. This contributes to climate change mitigation through carbon sequestration as well as other co-benefits including enhancing biodiversity, food security, sustainable livelihoods, increasing resilience and contributing to climate adaptation. We are partnering with regional neighbours on **coastal blue carbon protection and restoration**, including funding programs with Papua New Guinea and Fiji ($6 million), Indonesia ($2 million), the Indian Rim Association ($750,000) and Sri Lanka ($300,000).

Australia is also committed to supporting the world's coral reefs, which are particularly exposed to the impacts of climate change. Australia is a founding member of the International Coral Reef Initiative, providing $1 million to its Global Coral Reef Monitoring Network**.** The Network helps to monitor the health of coral reef ecosystems, informing conservation and management. In addition, we are investing $3 million in the **ReefCloud** project which will develop and apply a new generation of coral reef monitoring technology on reefs in the Pacific islands to support coral reef resilience and sustainable livelihoods.

Action on rainforests

Australia has taken a leading role in building support for action to slow, halt and reverse the loss of rainforests, and is partnering with a regional host to deliver the Fourth **Asia-Pacific Rainforest Summit** in 2022.

Climate and Clean Air Coalition

Australia is a partner in the Climate and Clean Air Coalition, which brings together more than 100 partners to reduce and avoid emissions of fast acting pollutants, such as methane, hydrofluorocarbons and black carbon.

Global Environment Facility (GEF)

Australia is a contributor to the Global Environment Facility (GEF) and is a member of the GEF Council. Through our GEF contributions we meet our obligations under treaties to support developing countries address issues such as climate change, biodiversity, desertification, organic pollutants and mercury. GEF is a partnership of 183 countries, international institutions, civil society and the private sector. The GEF supports the following international environment agreements: Convention on Biological Diversity, Stockholm Convention on Persistent Organic Pollutants, UN Convention to Combat Desertification, UNFCCC, Minamata Convention on Mercury, and Montreal Protocol on Substances that Deplete the Ozone Layer.

Mission Innovation

Australia joined Mission Innovation, a group of countries committed to doubling governmental investment in clean energy innovation over five years, at the 2015 Paris Climate Conference. Mission Innovation members are collaborating around a set of innovation challenges to accelerate technology breakthroughs in priority areas: smart grids; off-grid access to electricity; carbon capture and storage; sustainable biofuels; converting sunlight; clean energy materials; affordable heating and cooling of buildings; and hydrogen.

International Solar Alliance (ISA)

The International Solar Alliance (ISA) was launched at the 2015 Paris Climate Conference, aiming to promote the roll out of solar technology, particularly in countries that have high solar resources but under-developed electricity access. Australia is a founding member of the ISA and has committed to share its knowledge and expertise for capacity building with other ISA Members. For example, Australia is offering free tailored expert advice, webinars and training, and a library of tools and resources for policy development through the Clean Energy Solutions Centre.

Global Power System Transformation

Widespread global uptake of new and emerging technologies like hydrogen, carbon capture and storage, soil carbon measurement, low-carbon materials like steel and aluminium and long duration energy storage can reduce emissions or eliminate them in sectors responsible for 90% of the world's emissions.

The CSIRO is leading Australia's engagement with the Global Power System Transformation Consortium.

Agricultural Greenhouse Gas Alliance

Through the Australian Centre for International Agricultural Research, Australia is the current Chair of the Global Research Alliance (GRA) on Agricultural Greenhouse Gases and leads global initiatives to reduce agricultural greenhouse gases.

Q.17) What is climate change? What about it's impacts? Discuss the International efforts on climate change.

Ans: Climate change is the global phenomenon of climate transformation characterized by the changes in the usual climate of the planet (regarding temperature, precipitation, and wind) that are especially caused by human activities. As a result of unbalancing the weather of Earth, the **sustainability** of the planet's **ecosystems** is under threat, as well as the future of humankind and the estability of the global economy.

Official Definition Of Climate Change

NASA's definition of climate change says it is *"a broad range of global phenomena created predominantly by burning fossil fuels, which add heat-trapping gases to Earth's atmosphere. These phenomena include the increased temperature trends described by global warming, but also encompass changes such as sea-level rise; ice mass loss in Greenland, Antarctica, the Arctic and mountain glaciers worldwide; shifts in flower/plant blooming; and extreme weather events."*

Climate Change Definition vs. Global Warming Definition

According to the **US Geological Survey**, global warming is just one aspect of climate change. In fact, they say that global warming refers to the rise in global temperatures due mainly to the increasing concentrations of **greenhouse gases** in the atmosphere. On the other hand, climate change refers to the increasing changes in the measures of climate over a long period of time – including precipitation, temperature, and wind patterns.

Following the same line of thought, according to **Climate.Gov**, global warming refers only to the Earth's rising surface temperature, while climate change includes warming and the "side effects" of warming—like melting glaciers, heavier rainstorms, or more frequent drought. Ultimately, this means that global warming is one side of the much larger problem of human-caused climate change.

Climate Change And Corona virus: Is Corona virus Bad For Ecology And The Climate?

Unfortunately, corona virus is likely bad news for ecology in the long-term because it is tied to a **dysfunctional economic system.** We explain why, **here**.

Moreover, during these uncertain times, we can't forget about the climate crisis. We will gradually add our new pieces that connect climate change and sustainability with the current coronavirus outbreak. You can also make sure you don't miss a beat by subscribing to our monthly **newsletter**.

Who Is Responsible For Climate Change? And Who Studies It?

When we talk about climate change, we are often talking about the increase in temperatures linked to industrial activities and in particular the **greenhouse effect.** Therefore, we sometimes speak of global warming, which is said to be "of anthropogenic origin". Ultimately, the causes of global warming (at least at its current rate) are not natural but driven by the human economy and industries.

Many scientists are studying this phenomenon and trying to understand how activities of human societies are responsible for this heating. These scientists are grouped together in the **IPCC** (International Group of Experts on Climate), and they regularly publish reports studying the evolution of climate change, such as the **one** published in late 2018.

First Discoveries Of The Greenhouse Effect And Definition Of Global Warming

The first assumptions about the greenhouse effect were made by scientist Jacques Fourier in 1824, whose work was followed by several scientists who tried to quantify this phenomenon, like Claude Pouillet, John Tyndall and Svante Arrhenius. In fact, Arrhenius was the one who conducted the first experiment that accurately validated and quantified the greenhouse effect, at the end of the 19th century. He discovered that an air rich in carbon dioxide retains more heat from solar radiation leading to an increase in air temperature.

In the end, he concluded that if large quantities of carbon are released into the atmosphere (because of industrial activities that burn coal), the air will be charged with CO2 and more heat will be retained. By that time, the first estimates of temperature increases made by Arrhenius and other scientists were that if the greenhouse gases trapped in the atmosphere doubled, the average temperature of Earth would increase by 5º Celsius. In 1901, Gustaf Ekholm used for the first time the term "greenhouse effect" to describe this phenomenon.

For decades, these discoveries were not taken seriously in the scientific community. At that time, many experts believed that nature could self-regulate and that the impact of man was minimal. Notably, many scientists thought the excess CO2 would be absorbed by the ocean anyway, which is true within specific CO2 limits. Nevertheless, the thesis that global warming was linked with the greenhouse gases (including carbon dioxide) was proven to be true and validated in the 1940s by Gilbert Plass. Nowadays, with modern technologies, there is solid evidence that the concentration of greenhouse gases in the atmosphere affects the ability of the air to retain infrared radiation and heat.

Growing Awareness about Global Warming

In the 60s, several scientists showed the assumptions on the greenhouse effect were actually real. For what matters, Charles David Keeling proved, for instance, that the concentration of CO2 in the atmosphere was gradually increasing thanks to its measurements near Hawaii.

By its turn, Roger Revelle also proved that the carbon gases released by burning fossil fuels were not immediately absorbed by the ocean, as was previously thought. This discovery accelerated scientists' worries about climate change and as a result, society and politicians slowly began thinking about these issues as a possible problem in the future.

A decade later, in 1971, during the first Earth Summit, the definition of global warming and its consequences were broadly discussed and a year later, in 1972, John Sawyer published a scientific report highlighting even more clearly the links between global warming and the greenhouse effect.

For over a decade, evidence of climate change has been accumulated in the scientific community until in the mid-1980s, the world's 7 largest economic powers (the G7) called on the UN to create a group of experts to study this issue. This was the first time there was a real consideration and a true definition of climate change as a public problem by international institutions.

The First IPCC Reports On Climate Change

The **Intergovernmental Panel on Climate Change** (IPCC) was created in 1988 with the purpose of studying the evolution of the phenomenon of climate change and its consequences. It brought (and stills brings) together hundreds of scientists, climatologists, geologists, oceanographers, and biologists, but also economists, sociologists, engineers and other specialists in various fields – with the goal of having a global vision of this phenomenon. The IPCC is structured in three working groups:

- The first group studies climate change as a phenomenon: they focus on the process and its magnitude;
- The second group is specialized in **the consequences of climate change:** they're interested in the vulnerability of ecosystems and societies, as well as how the planet reacts and adapts to climate change;
- The third and last group is responsible for studying the ways of **fighting against climate change**.

The IPCC made its first report in 1990 and they kept making new ones periodically until they published their **last report** in October 2018 that focuses on the impacts of a temperature increase of 1.5 °C above pre-industrial levels, its GHG emission pathways and was built in an attempt to address policy makers more directly.

Overall, in these reports, the IPCC scientific community analyzes the causes of climate change and its impacts on the **ecosystems** and on society by developing predictive models. These models and forecasts are then used by governments and businesses, helping them to put in place strategies to combat climate change or adapt to it.

The Consequences Of Climate Change

Thanks to the work of the IPCC and other groups of scientists working on the definition of climate change, we now better understand the consequences of this phenomenon in our lives. In the minds of many, climate change is a relatively distant problem that simply implies that it will get hotter. Nevertheless, the consequences are much deeper and should be taken more seriously.

The Consequences Of Climate Change On The Planet's Ecosystems

An increase in temperature due to global warming it's not only about a heat increase that can be felt by humans or glacial ice melting – it has the potential to affect the planet's entire **ecosystem**. As we have been watching in many different countries, from the US (California) to India or South Africa, the weather is getting disruptive. Extreme weather events are more regular and their patterns are changing – they're more intensive, aggressive, and with more energy. This means more storms, floods, cyclones, and droughts will take place over the next years.

At the same time, the regulating capacity of oceans is also being affected by an increase in temperatures. If global temperatures increase dramatically, ocean levels will not only increase – they will also be facing the ecological challenges of oceanic acidification and deoxygenation. At the same time, forest areas (e.g. Amazon rainforest), fragile ecosystems (e.g. coral reefs) and **biodiversity** (e.g. corals, insects and mammals) are also under threat.

The Consequences Of Climate Change On Society And On The Economy

Furthermore, climate change is already challenging and can further challenge our societies. With the increase in temperatures in some countries, especially in Equatorial regions, the flow of climate refugees is **changing and increasing**, putting pressure in other countries to host them, help them strive and overcome political barriers.

The reasons for this move have to do with natural resources, such as drinking water, that are getting more limited and many crops and livestock that are unlikely to survive (affecting locals but also the global economy of the several industries that rely on raw materials) in specific locations because of the temperature being too hot or too dry, too cold or too wet. And as it turns out, **studies say** that the wealthiest countries of the world will be the ones experiencing fewer changes in their local climate compared to the poorest regions if the global average surface temperatures reach the between 1.5º and 2º Celsius.

The Consequences Of Climate Change On Businesses

Finally, **businesses** are also likely to be affected by climate change. Indeed, in a context where the climate is changing, companies need to be aware of the risks that they may face and be prepared to deal with them by developing **CSR strategies** that evaluate the i**mpacts they may suffer**. Events such as damaged crops, the loss of infrastructures, unexpected changes in market stocks, investors that ask for **sustainability reports** and the growing expectations of society for business to be transparent are variables to keep an eye on.

How To Fight Climate Change

To fight climate change, we must first reduce our greenhouse gases (GHG) emissions. To accomplish this, the first step is to embrace **renewable energies** that are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat, and avoid creating energy by the burning of fossil fuels. As well, besides swooping the types of energy we produce, we must also make everything more efficient, because even if the energy comes from a renewable source, it still won't be carbon neutral and will still contribute to the ozone depletion.

We need to adapt our lifestyles to overcome these growing challenges that climate change is bringing. For this to happen, we should start to create a worldwide culture of **sustainable development**, where the energy is wised wisely and efficiently, where a **circular economy** is a strong bet, as well as durable and eco-friendly products. One thing is for sure, we need to **choose responsibly** the products we buy because our demand as consumers influences what we are supplied with.

Climate Change: Myth Or Reality?

Like many social and scientific problems, climate change has been controversial from the start. Some scientists and critics have questioned climate change. They are called climate-skeptics. Several arguments are invoked, for example:

"Climate Change Does Not Exist, It's A Lie"

This argument, often used by skeptics, would make climate change a lie, invented by states, or world elites and the media. No evidence or explanation has been provided to support this argument.

“Climate Change Is Natural, It Does Not Matter”

This argument is often put forward by climate-skeptical scientists to question the media attention that climate change enjoys. Their idea is that climate change is a natural phenomenon, normal and cyclical, and there is no need to worry about it. However, the work of Keeling or Revelle, and then the work of the IPCC and hundreds of newer independent works, have proved that this argument is false, and that climate change is indeed a phenomenon of human origin (as the temperatures have been rising at abnormal rates since the industrial revolution) and that it is dangerous for the world’s ecosystems and societies.

The Human Origin Of Global Warming: Greenhouse Gases (GHG)

Some scientists have also questioned the human origin of global warming, explaining that CO2 released into the atmosphere by human activities does not really affect the climate nor the ecosystems of Earth. They argue that these gases are either regulated by ecosystems, that they are not released in sufficient quantities to have an impact, or that other gases (such as water vapor) have a greater impact on ecosystems.

Although all these positions are partly true, they do not call into question the human origin of global warming. Thus, CO2 is well absorbed in part by the ocean and by plants, but not fast enough to be regulated due to the huge contribution of human activities.

“We Do Not Really Know How The Climate Works. The Same Happens With Climate Change”

Other climate-skeptics argue that because climatology (the science that studies climate) is very complex and has many factors to consider, it is difficult or impossible to predict the consequences of an event such as the increase of CO2 concentrations in the atmosphere. These critics question the reliability of the IPCC models up to some degree and therefore their predictions.

Although it is true that climatology is a complex science, the predictions made so far about temperatures rising, ocean acidification and the weather consequences of climate change have proved to be rather close to reality.

The Scientific Consensus on Climate Change

In the end, the overwhelming **majority of global scientists** in all relevant fields agree on the causes of climate change and most of its consequences on ecosystems and society. Scientifically speaking, there is no doubt about the existence of global warming and climate change. It is now time to find out what actions will be taken at the political and social spheres to make our world **more resilient** and fight climate change.